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## *Electric Railways.*

TO predict that the locomotive engine will have its day,—that, like some of the gigantic forms of the geological series it will attain its widest development, only to fade away and die,—would be a hazardous prediction. It would not, however, be more bold than was the original prediction of George Stephenson, that he would make a steam coach that should run at twenty miles an hour. That anticipation, indeed, was thought to be so rash that it could not be entertained by any sane and well-balanced mind. And yet within ten or fifteen years of its utterance, Brunel was designing engines to run at 100 miles an hour; and made them to go, and steadily worked a portion of the traffic of the Great Western Railway, at a running speed, over more than twenty miles of line, of seventy miles an hour, which is about the speed of the great senegal swift on the wing.

So rapid and so successful has been the growth of the locomotive engine, that its admirers may well hold that it promises to be the motor power of the future, as well as of the present. And there is no doubt that immense advantages attend on the method which has wrought such a revolution in our means of transport. But the locomotive has certain great disadvantages with which to contend. The mode of thus applying power is extremely costly. The actual resistance of the engine ranges from a weight equal to that of the rest of the train to about a fifth of that proportion. To move that weight is not only costly in proportion to the ratio between train and engine, but is so in a much higher proportion; as the friction of the automatic engine is much greater, per ton, than is that of the propelled train. Allowing equal figures for atmospheric resistance, the constant for the friction of the engine is usually calculated at about double of that for the train. But we have a more exact mode of ascertaining the cost of locomotive power, and that is one as to which it is very remarkable that it has been hitherto so far left out of sight. On the Blackwall railway, at the time when it was worked by ropes, observations were made as to the power absorbed by the loaded, and by the unloaded rope, the difference between the two being that due to the weight of the train. This was only 21 per cent. of the whole. The cost of working per ton per mile, according to data given by Mr. Robert Stephenson, was 0·1875d. This is less than the cost of working any railway in England in the year 1879, with the one exception of the Manchester, Sheffield, and Lincolnshire line, in which the cost is at the minimum, not owing to engineering consideration, but because the traffic is so much more equal in both directions than is the case in any of the great trunk lines leading to the metropolis. The great source of waste, the return of empty wagons, is thus avoided. As closely as we can calculate, the average cost of railway transport in the United Kingdom in 1879 was a little over one-fifth of a penny per ton mile of loaded train, not including the weight of the engine and tender. But the Blackwall cost, for moving loaded trains alone (the cost of the apparatus being deducted) was ·04d. That is the cost of what was anticipated to be a very costly mode of propulsion (although it was in the first place thought to be preferable to the use of locomotives). We find that the consumption of power by the stationary apparatus was about four-fifths of the whole power exerted. And we are thus led to the conclusion that four-fifths of the power of the locomotive is consumed in the propulsion of itself and of its tender.

A bit of positive experience such as this adds great point to the value of any attempt to substitute for the locomotive a means of propulsion that has a fixed point of resistence. The attempt was made, years ago, by the projectors of the atmospheric railway. Some of the first engineers of the day,—Isambard Kingdom Brunel in this country, and Eugène Flachat in France,—entertained a high opinion of the feasibility of this plan; and not only so, but backed their opinions very heavily by their purses. And it should be more generally known than is the case that it was not to the mechanical difficulties of the problem, great as they admittedly were, that the final abandonment of the scheme was due. A speed of sixty miles per hour was attained on the atmospheric railway between London and the Croydon; and the Dublin and Dalkey Railway was regularly worked on this system for many months. The real cause of failure was the rapid entrance of the terrestrial heat into the exhausted tube, thus raising the resistance of the rarefied air to a tension almost equal to that of the external atmosphere. Thus the stationary engines on the South Devon Railway were actually pumping heat out of the earth. They became nearly red-hot in the process, which was like that of baling water by a sieve. Nor is it probable that this physical obstacle to atmospheric propulsion against an artificial vacuum can ever be successfully overcome.

Messrs. Siemens have lost no time in endeavouring to apply the greatest discovery of modern times,—probably the most important physical discovery ever made, that of dynamo-electricity,—to locomotion. In our opinion, the attempt deserves the most careful and patient attention. The difficulties to be overcome, as in the former case, are not so much mechanical as physical. That the former obstacles can be vanquished, Messrs. Siemens will say, is no longer matter of doubt. They can point to the actual speed of some ten miles an hour attained by their electric locomotive and its miniature train in the grounds of the Crystal Palace. The main difficulty here,—and we are not among those who regard it as insuperable,—is that of conduction. This is *the* great question, on which, as we have more than once intimated, the future of the industry of mankind depends. It here presents a new "case" to the student. It is a difficulty which opposed the introduction of the electric light, and which has been already, to a great extent removed, as far as it opposed an obstacle to science. It is the primary question of electric conduction. The working of a line of 300 yards in length does not give much information as to the mode in which a system that may work admirably for such a distance, can be extended for a distance of 300 miles.

In the experiment at Sydenham the motor power is supplied by a stationary engine of eight-horse power nominal, which drives, in the ordinary mode, a dynamo-electric machine. The electric current induced is conducted along a rail laid in the middle of the track on which the trains travel, which is partially insulated by being laid on wooden blocks. The return current passes through the exterior, or bearing, rail. The locomotive is a Siemens dynamo-electric machine, mounted as a propeller, and acting as a sort of counterpart to the fixed dynamo-electric motor. The current produced by the latter, and sent into the central rail, is taken up by brushes of iron wires attached to the locomotive; and thus causes the appropriate part of that apparatus to revolve. Having thus done its work, the current escapes through the metal wheels of the truck to the exterior rail.

It is evident that this is a bold and beautiful application of the principle of the electric telegraph. Correspondence of action between two portions of apparatus, placed in electric communication, is effected in each case. In one, motion is communicated by one stationary machine to another. In the other, motion is communicated from a stationary to a corresponding movable engine. The fact that a much larger development of energy is applied in one case than in the other does not affect the principle. Nor does it, so far as the dynamo-motors are concerned, affect the promise of success. We do not see why the same principle which moves a ray of light by an impulse sent through 3,000 miles of cable, should not be applied to the movement of a train of 1,000 tons, so far as the mere reciprocal action of the dynamo-motor is concerned. The knot of the question does not lie there. It is concealed in the centre rail. It regards the transmissibility of the power. As to this, a little line of 300

yards tells us little. The point which most disappoints us is, that so long a time has now elapsed since Sir W. Thomson and Dr. Siemens both expressed their opinion as to the transmissibility of enormous doses of electric force through conductors of a certain magnitude, without more having been said or done on the subject. It is with this question of transmissibility of power that the industry of the future is bound up. So long as distance is sharply limited in this respect, coal will continue to be the main source of mechanical power. It is a costly source, and it is one of which the cost depends greatly on locality. If, for example, ten miles should prove to be the extreme distance for which 40-horse-power or 50-horse-power of energy can be transmitted electrically without enormous loss, coal will for the present hold its own. If the question should be answered in the opposite sense, the reign of King Coal is not more assured than is that of certain potentates of more ancient dynastic rule, although of less remote pedigree.

## FURTHER NOTES AT THE ROYAL ACADEMY.*

MR. HERKOMER's large painting in Gallery V. (373), the scene at Portsmouth dockyard-gates, when the surmise came of the loss of the *Atalanta* ("Missing" is the title), we can hardly regard as a great success. As a picture it is somewhat overcrowded with figures, and the pathetic feeling intended to be conveyed hardly seems realised. A rather remarkable picture by Mr. Small, "The Survivors," represents the remnant of the crew and passengers of a ship-wrecked vessel in the rigging, a woman among them, dying or insensible, with difficulty held there by some of the men. Below is seen a waste of boiling surf. It is a striking and unusual subject. The one point which interferes with its real effect is, that in spite of the storm in the water below there seems scarcely any wind in the picture. The clothing of the unfortunate people would surely have been blown about in utter disorder under the circumstances; but there is no appearance of this. Mr. Morris's "The Queen's Shilling," is not successful either; it does not fairly tell its story. Among landscapes Mr. Walton's "Leaves have their Time to Fall" is a fine autumnal scene. Mr. Boughton's "A Dead City of the Zuyder Zee" (374), is a charming view of a sleepy little Dutch seaside hamlet, with its row of prim, neat houses, and some very characteristic figures; on the right we look up a lane with a straight row of poplars on each side, reminding one of the well-known Hobbema in the National Gallery. Mr. Riviere gives us a good bit of grim humour in a small painting of a navvy asleep on a bench, his bull-dog in turn asleep on his body, "Let sleeping Dogs lie," and the countenance of both dog and master emphasise the proverb: in this case the human element in the picture is as good as the brute one. Mr. Millais's portrait of "Sir John Astley," cigar in hand, is capital; indeed, this distinguished artist has seldom, if ever, been in greater force than this year.

Gallery VI. contains Mr. Brett's leading work of the year, "Golden Prospects" (445), a view from chalk cliffs over a sun-lighted sea. The surface of the calm sea, with its broken lights and reflections stretching in perspective far away, is wonderful, and so is the mass of grey-lichened rock in the foreground. It is worth while to compare this with Mr. Hook's treatment of the very same scene (on the Cornish coast) in Gallery III., to see how the idiosyncrasy of two powerful artists can give such utterly different feeling and effect to the same material facts of a scene. They are painted under totally different atmospheric conditions, certainly, and Mr. Hook's probably represents more truly the average effect and tone of the scene. Mr. Brett's effect is such as might be seen on one or two exceptional days of a hot summer only, and may, perhaps, be exaggerated even for that; but, if so, it is such a splendid and fascinating exaggeration that one can only be glad that one painter at least is capable of it. Miss Clara Montalba has made a noble picture out of "St. Mark's, the Piazza inundated"; the slight veil of water over the square, for it is little more than that, just serving to give legitimate ground for a splendid effect of glittering reflection. This is much the finest work the lady has produced, and is free from the mannerism of tone which has been the one drawback to her beautiful Venetian studies. Under this hangs a charming work by Mr. Val Prinsep, "The Palace in the Lake," different from anything else we have seen from his hand. It is a painting of Indian architecture essentially, the balcony of one palace forms a foreground object, and the white walls and towers of another glimmer above the water in the middle distance; the effect is beautifully given, and the architecture admirably drawn and painted. This gallery contains a very pretty portrait by Mr. Storey, under the title the "Coral Necklace"; "Sunday in the Highlands," by Mr. MacWhirter, a sketchy painting of a windy sea-coast, with a straggling procession of church-goers; and a good bit of human character and very careful execution by Mr. Eyre Crowe in "Sandwiches," a painting of a group of advertising men on the steps at one angle of Trafalgar-square. Mr. Watts's large portrait of Sir F. Leighton we cannot much admire; it is heated and unreal in tone, and the legs of his famous statue, which are introduced as an appropriate accessory, come very awkwardly into the picture.

In Gallery VII., Sir F. Leighton's ideal love-scene, "Whispers" (585), is more interesting in the male than in the female figure; the latter is very sentimental, and rather deficient in expression, the former fine both in expression and drawing. Mr. Shaw's two paintings of the sea, "Atlantic Rollers" (530) and "A Comber," are not equal to the fine sea painting he exhibited in the same position last year: they both have the same defect, want of scale; they are evidently meant, to put it in a matter-of-fact way, for large waves, and they look like rather small ones; they do not suggest the weight and mass of large undulations. Mr. Thos. Faed's "School Board in the North," a rather untidy Scottish damsel who has pushed aside the tea-things in a heap to write an official letter, is a very good bit of painting, and shows considerable humour and point. Mr. Alfred Hunt's very original work, "Safe in the Mud," probably a scene at Whitby, appears to contain some of his best painting, but is hung too high to be fairly seen or judged of. The ill-treatment of this painter's work seems to be an accepted tradition at the Academy, not a creditable one. Mr. MacWhirter's little painting of "Summer Evening, Venice," is beautiful in a quiet way. Mr. Millais has a fine portrait of a fine-looking soldier in his "Captain James," of the Scots Greys. Other works to be noticed are Mr. Eyre Crowe's "Sir Roger de Coverley," seated in the coronation-chair at Westminster Abbey; Mr. Van Haanen's clever and characteristic painting of Venetian "Washerwoman," and Mr. Colin Hunter's "In the Gloaming," a lake scene, and its companion, a morning scene, under the title "Mussel-Gatherers." Mr. Dendy Sadler, who treated monastic life so well last year, has done still better in the same line this year in a rather large and important work, "It is always the largest Fish that's lost" (596), where a row of monks, whose countenances show great variety of character and expression, are seated under the wall of one of the out-buildings of the convent receiving an exhortation from one standing with his back to the spectator, and whose remarks are evidently pointed especially at "the largest fish," in the shape of a very fat and sensuous-looking brother, who seems to take it in very good part. This is a very clever work.

The Lecture-room is not very remarkable, except for the work we have already mentioned by Mrs. Butler. Mr. Bridgeman exhibits a very elaborate painting of an ancient Egyptian funeral procession on the Nile; remarkable, however, rather for the archæological learning displayed in it, and the labour and brilliancy with which all the various details are painted, than for very striking effect or interest as a picture. Mr. Henry Moore exhibits a grand painting of sea, "Mid Channel," in which there is no doubt either as to the movement or weight of the water, though we do think this fine sea-painter is getting too purplish in colour with his sea-water. "An Evening with Mozart" (Mr. J. D. Hardy); "His First Offence" (Mr. Haynes Williams); "St. Jerome" (Mr. Legros), may be mentioned; the latter work is a fine piece of drawing and painting in the *torso* of the figure, but it is a kind of painting which seems an anachronism now. Mr. Gunning King, under the title of "Reminiscences," gives a good painting of the Wellington Monument in St. Paul's, with an old pensioner reading the list of battles. MR. MAW EGLEY'S "CLARISSA HARLOWE" we cannot admire; it is a poor conception of Clarissa, and the other figures are wanting in character; Clarissa is not good enough, and they are not coarse enough. Under the title of "Tibicina," Mr. Arthur Hill exhibits an exceptionally good nude figure, very finely drawn, and very delicate and beautiful in its cool flesh tints; she is seated on a marble seat with a marble background; the effect of the whole is very pure, cool, and harmonious, but the face is weak and uninteresting. Two small pictures of cats and kittens, by Mr. Couldery, are perfect in their way, and deserved much better to come on the line than some of the feeble paintings of more ambitious subjects which have that honour.

In Gallery X. are one or two good paintings of *genre* character on rather a large scale. "Not of the Fold" (1,354), by Mr. F. Morgan, draws a contrast between some tramps or gipsies seated under a bank on Sunday morning, while more fortunate or more respectable persons are going over the bridge to church. Mr. Macbeth's "The Ferry" is a large and interesting work; the subject mainly a collection of country folk on a large flat-bottomed floating wagon rather than boat, getting hauled slowly across a sluggish stream; the figures include some which he has repeated very often, but the whole work is a fine one, though peculiar in colour; the expanse of sky or rather of thin floating white cloud is very tender and atmospheric in effect. Sir F. Leighton has a pretty head, "Viola"; Mr. Frere an admirable little school-boy picture, a scene in snow, "In Front of the School"; Mr. Davis a sweet and quiet twilight landscape, "The Evening Star"; Mr. Helmick a clever little figure, "The Bachelor"; and Mr. J. Clark a small interior scene, "The Word of Life," a child reading the Bible to an old man, which is very pleasing, but does not come up to what one or two former works by this artist led us to expect. The best painting in this room is, however, undoubtedly Mr. Ouless's very fine portrait of "Mr. David Dale," as good a thing as he has ever done.

Our list of the pictures of which it was impossible to omit mention will, we think, support the opinion we have expressed that the exhibition is, on the whole, above the average. Of the sculpture, we will say something separately.

It is to be wished that quotations in the catalogue were more correctly made. We have often been struck with the inaccuracy of artists in their quotations, but never saw anything equal to this travesty of a well-known *mot* of *Shylock's* which an R.A. affixes to his picture, and gives as from the "Merchant of Venice,"—

> "Safe bind, safe find;
> A proverb well in store in thrifty mind."

If a painter has so bad a memory for Shakspeare quotations as this implies, he might, at least, take the trouble to turn over the play and copy the passage correctly.

* See p. 502, *ante*, &c.

## BUILDING AND DECORATION IN VIENNA.

THE recent wedding festivities in Vienna have turned people's minds to the banks of the "schöne blaue Donau." Our readers have been kept well informed, both by print and illustration, of the extensive building operations going on at Vienna, which have already, to a considerable extent, changed its face, and which, if they continue to proceed at the same rate as hitherto, will, at no very distant time, convert it into a modern city. We desire to keep alive the interest we venture to think we have awakened. Towards the end of last year fresh activity began to prevail in the new operations. What we write about now refers not so much, however, to new buildings, as to the completion of what has already been begun. We propose to treat more of the artistic execution of the work in hand.

One of the principal events exercising people's minds in Vienna at present is the interior restoration of St. Stephan's Cathedral, which has recently been the subject of long deliberations between the Vienna Dombau-Verein on the one hand, and various other associations and personages, mostly of high rank, all more or less interested in the matter, on the other. The subject next in importance, which is the theme of general discussion, is the interior decoration of the new Rathhaus of Vienna, illustrated some time ago in the *Builder*.* As regards the first

* See vol. xxxv., pp. 978, 980.

incident, we need only remark that, after disposing of the so-called "venerable" patina, for the preservation of which the clerical party especially show so much preference and solicitude,—which, by the way, consists merely of simple lime and lamp-black,—people have come back at last to the original polychromatic decoration. A hope is expressed that the whole will be found in a passable state of preservation, and that it has suffered only in few places, so that it may be preserved in, or restored to, its original condition without much delay. As regards the restoration of the remaining objects of the less important branches of church architecture, such as altars, choir-stalls, lamps, statuary, paraments, monstrances, and so forth, it is reported that the original plan of re-erecting everything anew in the Gothic style has been abandoned at the last hour. Everything is to be left in the style of architecture in which it is at present; only repairs, improvements, and cleansings are to be undertaken.

Respecting the second point, the decoration of the new Town-hall, the most essential particulars are the following. In accordance with the views and resolutions of the commission of experts specially appointed for the purpose, and which includes such men as Oberbaurath J. von Schmidt as the principal architect of the Town-hall and president of the commission, Hofrath Ritter von Arneth, Hofrath Ritter von Eitelberger, and Regierungsrath J. von Falke, the interior decoration of the Town-hall is to be carried out in an historical sense. Allegory is to occupy only a second or even third place in its adornment, or, rather, it is to be avoided as much as possible. The decoration has been confided to old and young artists alike, with whose work no special fault can be found. Hans Makart is to paint three frescoes for the ceiling of the banqueting-hall (Reconstruction of Vienna; Science and Arts; Commerce, Traffic, and Trades). At the window-piers will be placed statues of historical personages renowned in the annals of Vienna (for instance, Starhenberg, Solm, &c.), and over them mosaics (portraits of Beethoven, Mozart, van Swieten, Raffaelle, Donner, Grillparzer, &c.). The statues will be the works of the sculptors Weyer, Tilgner, Wagner, and others; the mosaic portraits will be executed after cartoons by Trenkwald, Julius Schmidt, and other artists. The space above the orchestra will be filled with medallion portraits of Raimund, Schubert, Strauss, &c. The ceiling of the hall of representatives will contain a picture of the siege of Vienna by the Turks, by the battle-painter S. L'Allemand. The council-chamber of the municipality will have a frieze-like decoration in the form of a series of pictures representative of the history of Viennese life (for example, the opening of the Prater at the time of Maria Theresia), by K. Karga and Jul. Berger. The refreshment-room recives a frieze by Professors Laufberger and E. F. Steinle. The life-size portrait of the Emperor, by H. v. Angeli, will be placed in the hall of representatives. A very valid objection is raised to placing historical paintings, such as the Siege of Vienna, or the development of the city, on the ceiling; it is justly considered that they are only fit for vertical places; allegorical representations, it is thought, would be much better for the ceilings.

Heartburnings have likewise been occasioned by the proposed expenditure of another half-million of florins in the matter of ventilation and heating, a sore subject, on account of the general disinclination of lay persons to view this highly important matter in the same light as architects and sanitary engineers. In other respects, however, the completion of the Rathhaus is proceeding at a rapid pace. The vaulting of the corridors, special stairs, fire-proof rooms, as well as the roof, are completed. Great progress has also been made during the winter with the stonemason's work. The erection of the tower is proceeding with all possible speed.

The Houses of Parliament* are nearly ready. During the winter the stoves were placed. The walls and ceilings have received decorations in stucco. No final decision has yet been come to respecting the polychromatic decoration of the interior, for more money is wanted, and more money will not be readily forthcoming.

At a recent meeting of the building committee this question was thoroughly gone into. The original estimate was seven million florins (in round figures 700,000*l.*), a mere bagatelle, as the Viennese in their humorous way observe. This is now found not to be sufficient. Five millions and a half have already been expended, the artistic decoration alone taking up two millions and a half. The pediments of the three façades, the attic story, all the statues placed there, the bas-reliefs in the chambers of the two houses, and the capitals of the columns, are executed in marble. The quadrigas, on the other hand, are in bronze. The original resolution come to, to execute all the sculptural adornments only in the genuine material, has been adhered to. As to the proposed polychromatic decoration of the façade and the principal rooms, nothing has finally been settled; all that is known is, that it is estimated at a million florins. The paintings in the interior are to represent scenes of the country's history. Besides, this does not include the whole outlay, for the completion of the decorations is reserved for a future time, and will take about three years. The building itself, however, will be ready for occupation in about two years. The carriage approach as planned will probably have to be abandoned, for it is now found that there is not space enough to execute it as originally designed. It will have to be lowered, to make up the difference of level, and it is also proposed to erect an additional portico with stairs.

In the two Court Museums the cupolas are completed; the slating has been finished, and the provisional glazing of the windows and skylights is being proceeded with. Laying down the gas and water conduits is also near completion, and very little remains to be done before throwing the museums open for public use. There is little talk now of completing the Vienna Hofburg for the present. Nor do we hear much of the erection of the University, which appears to be temporarily abandoned.

The construction of the Court Theatre is proceeding but slowly, on account of the contractors for the stone being very tardy in their deliveries. The iron ceilings, however, have been placed, so that the iron roofs will soon be set up. The erection of the walls, however, has not yet been brought to the same level; but the back and side façades have risen to the height of the principal cornice. As the theatre is to be opened in the autumn of 1882, it is high time to think of the plastic adornment of the building. It has now been settled by the building committee that this decoration is to be analogous to that of the two Court Museums. The mythical origin of the drama and the historical development of the dramatic art are to be represented. The front pediment of the centre block between the principal projecture and the side wings will be surmounted by the statue of Apollo, flanked by the dramatic Muses; lower down is a relief, the triumphal progress of Bacchus and Ariadne, suggesting the connexion of the Greek drama with the worship of the Wine-god. At the corners will be placed the personifications of the classic and romantic art. The niches of the first story receive allegoric representations of the Passions. The principal phases of the modern drama will be shown by portrait-busts of the most eminent dramatic poets, and by characters from their works. Among them will be, Shakspeare's Othello and Ophelia, Lessing's Minna von Barnhelm, Goethe's Faust and Gretchen, Schiller's Jungfrau von Orleans, Hebbel's Siegfried and Chrimhilde, &c. These figures will be over the windows of the central block. The back façade will receive similar adornment. The most eminent Austrian artists are to execute this sculpture. When will such opportunities be afforded to English sculptors?

The projected new private residences, which were to be in the style of the Gothic Renaissance, turn out to be, after all, of the late German Renaissance; but it is an encouraging sign of the present spirit of artistic enterprise on the part of the builders that, near the Town-hall especially, the buildings are being provided with arcades. These "arcade-houses," as they are called, meet with universal approval, and there is a prospect of their being successfully introduced in other parts of the city. As regards private residences in general, builders in the suburbs are striving to imitate the splendours of the Ringstrasse, which, on the whole, they are successful in attaining, of course on a less gorgeous and expensive scale.

It is at all times interesting to pursue the history of the building of corner houses, and we need not be surprised if this subject is much discussed in architectural circles in Vienna, where an attempt has been made to solve this difficult problem satisfactorily. Corner buildings present difficulties of no mean order, further increased by the general disfavour which corner houses encounter. Indeed, older constructions of this nature well deserve this dislike. They are generally distinguished by helpless conception, absolute jejuneness, and want of symmetry. To obviate this, two new types were introduced, one of them dating from the Middle Ages, the other from the time of the conventional Renaissance. Both show that their authors went direct to work; they made the worst feature, the sharp corner, the centre of the building, and the wings the flanks. The former, choosing the Mediæval type, mark the corner by a turret as the crowning point of the attic story; the latter, proceeding on the lines of the Renaissance, change its disagreeable feature by doing away with the corner. This is a negative way of dealing with it, because the angle is removed, while at the same time a new (third) face is provided. The entrance to the house is placed in it, and the new façade is embellished by balconies, statues, porticos, thus projecting the whole. In this wise, a corner building may be made symmetrical and beautiful; but this by no means precludes the possibility of its being made equally beautiful with double façades under the treatment of a skilful architect.

In concluding this notice of building and decoration in Vienna, we may finally and briefly refer to the great development of another branch of Viennese architecture. In the suburb of Währing, outside the lines of the city proper, has arisen within the last few years a cottage quarter. The style of architecture adopted, however, finds little favour among the middle, or burgher, classes of the Austrian capital, most of its adherents being members of the official class, as well as artists and men following the literary profession. The general effect of this description of residences is very pleasing. With the great facilities possessed by Vienna of obtaining every kind of building material at a moderate cost, those buildings ought to form a distinguishing characteristic of most of its suburbs.

* See vol. xxxv., pp. 1294, 1296.

## ALBERT HALL EXHIBITION.

SEVERAL hundred pictures and drawings are collected in the gallery of the Albert Hall, and are now open to the public. Nearly 200 of these are works accepted by the Royal Academy, but returned for want of room; works, that is, which come up to the Royal Academy standard of what is good enough for exhibition. The standard of what is simply admissible at the Academy is, as the present Academy exhibition sufficiently shows in a good many instances, not so high as to lead to the necessary conclusion that one would find a very high class of work prevalent among these 200 works. There are, however, some very good paintings,—landscapes chiefly, the omission of which from the Academy contrasts oddly with the acceptance of some of the works which are there. Among these may be mentioned, "The Pass of Shieldaig" (133), by Mr. W. Beattie Brown, R.S.A., a landscape which belongs, in some degree, to the same stamp of work of which Mr. Peter Graham's paintings are examples, but which we have no hesitation in ranking as superior in style, and in the absence of mannerism, to any of that more fortunate painter's works, which are so favourably hung in this year's Academy. "A November Flood" (49), by Mr. T. H. McLachlan, is another capital landscape worthy to find a place in any exhibition. Mr. F. C. Jackson has two good little Cornish coast landscapes, which it must be admitted are ("The Seagull's Bath" especially) tolerably palpable efforts to borrow Mr. Brett's pencil and wield his stores of sunshine; but as such they are very clever. "The Mill Tail," by Herr A. de Breanski, is another good landscape. Miss Mary B. Miller's "Study in Light and Shade," a portrait of a young lady in a hat which partially overshadows the countenance, is very good. There is a certain poetic power in Mr. Callcott's "Prospero leaving the Enchanted Isle," a very glowing effect with a ship on calm water reflecting a gorgeous sunset. A striking likeness of Mr. W. S. Gilbert, on board his yacht (47), by Mr. James Archer, will be sure to attract attention. Among the water-colours, Mr. Curnock's "Snowstorm in the Ogwen Valley" is a fine thing, and there are other water-colours worth looking at, as well as other items among the oil paintings; but in the present glut of exhibitions space will hardly permit us to particularise further.

Among a small collection of architectural drawings are two admirable illustrative water-colour drawings, "A Room in the Palace of the Doges," by Signor S. Carelli, and "The Choir of the Cathedral of Cefalu," by Mr. M. S. Wratislau. Mr. Hensman's "Morning-room decoration," a coloured geometrical drawing of decorative woodwork and wall-paper, is original and refined. The perspective view of "The exterior of St. Nicholas Church, Whitehaven" (541), by Mr. C. J. Ferguson, is admirable; the church is very boldly though simply designed, with a very large and massive square tower; the whole design shows real feeling for the best qualities of Gothic architecture.

There are works also by Mr. G. Truefitt, Mr. Wadmore, Mr. E. Ferrey, and Mr. H. H. Statham, the last of whom contributes a very excellent drawing in the shape of a study for the completion of the Campanile at Florence.

There are some pretty things among the sculpture; notably Mr. Ruddock's figure called "The immaculate Conception," a figure of the Virgin, intended for the "Church of the Holy Name," in Manchester, and Signor Fontana's bust of Miss Ellen Terry as *Portia*. Mr. Stannus sends his "Reading Boy."

The exhibition includes a large collection of very good water-colour copies from pictures by the Old Masters, lent by H.R.H. the Duchess of Edinburgh. Considering the mainly popular and educational objects of the Albert Hall, these seem peculiarly in place here, and may afford a good deal of information to those who stand in need of it.

The Exhibition of Artistic Furniture, which promises to be very interesting, will be open next week.

## LONDON INTERNATIONAL EXHIBITION SOCIETY.

UNDER this rather large title a society has been formed with the intention, as stated in the prospectus, of affording to foreign artists space for the exhibition of their pictures in England which they are not likely to find at the Royal Academy Exhibitions. That the latter body have found themselves unable to bestow much space on foreign work, and have sometimes hung very badly works which on their merits were deserving of the best places, no one can deny. This fact, we are told in the prospectus, is so grounded in the minds of the leading painters abroad, that they have for some time past abandoned the idea of sending their works to Burlington House, and only a few of the great works produced are ever seen in England. It is hard to see, however, what other line the Academy could very well take. It is primarily an institution for the development and encouragement of English art; and considering how great is the demand for space on the part of English artists, and how bitter the complaints of rejected persons, we can hardly see that the Academy would be in the right to devote any great degree of space in their annual exhibitions to the works of foreign artists. We may readily concede that if they did so the interest and standard of the exhibitions might be raised, but we can hardly admit that the Royal Academy exists for the encouragement of Continental art, on equal terms with English art. We are pretty certain there would be loud outcry from English artists if such an idea were practically acted upon.

The promoters of the society we are speaking of contrast London with Paris in this respect, and say that the more cosmopolitan character of the Paris *Salon* has made it the great art-centre and the leading art-market of the world. So far as this is the case, however, it is partly owing to other causes than merely artistic ones. Paris is necessarily in some respects a more central depôt in regard to Continental art and Continental purchasers than London can very well be. And, after all, the cosmopolitan character of the *Salon* exhibitions seems a good deal exaggerated in the remarks we have been referring to. By far the larger proportion of the *Salon* consists of the works of French painters.

Our observations, of course, rather tend to support the idea that a genuine society for the representation of Continental art in London would be an advantage, and is, in fact, called for the more because it is not a movement that the Academy can very well take up except to a very limited extent. Part of the object of the new society, avowedly, is a commercial one. We hope it is not the only object. They expect that their annual exhibitions will divert to London a considerable amount of the enormous trade in pictures which is carried on in Paris, with Americans especially. This latter aim would be more likely to be attained if the society can persuade Americans to be as fond of London as they notoriously are of Paris. Their other object is the cultivation of a wider and more catholic taste in England. The society's exhibitions from year to year in London "cannot fail to have the best possible effect on the younger artists of the English school. The isolation of England from the great art-movement of other countries is a disadvantage much felt by English artists."

This is, to a great extent, true; though why the palpable fact should be ignored that there is also a "great art movement" in England of late years, we fail to see. But there is no doubt that any annual exhibition bringing us some of the best work of the Continent would be a real boon. But when we come to look at the opening exhibition of the Society, at the "United Arts Gallery," New Bond-street, we are reminded of the fable of the mountain and the mouse. A society which professes to be undertaking so important and serious a work in making us acquainted with the best qualities of Continental art shows us a comparatively small collection of pictures which, as far as artistic merit is concerned, is, in comparison with the annual exhibition at such a gallery as Mr. Wallis's, almost valueless. If we were seriously to accept this as a specimen exhibition of what foreign schools can give us, we should say that it only served to show how much vulgar and commonplace painting is done on the Continent which we in general have the good luck to see nothing of. We could positively only note one picture of importance which we could say represents really high qualities, "The Orphanage of Katwyk, Holland," by D. A. C. Artz. This is an interior with three or four figures, remarkable for the excellent drawing of the figures, for a thoroughly simple and unpretentious style, and for the beautifully clear light with which the whole interior seems permeated. But this is really the one painting which can be said to be of real importance. Talk of doing the work which the Academy neglects! Why, the one brilliant picture by Munkacsy ("The Two Families,") which the Academy hung in a conspicuous position last year, was nearly worth this whole exhibition. There are some pretty bits of landscape, and some figure-pictures, such as "A Modern Shylock," which would be accepted as fair works of second-class interest if they were in the Royal Academy. The general tone of the collection is commonplace, and there is a good deal that is worse than commonplace. To read the considerations put forth in the preface to the catalogue, and then to go round the walls, impresses one almost with a sense of the ludicrous. We entirely approve of the object of the society, but if their net can haul us in no better fish than most of these, we must come to the conclusion either that they have not managed the business properly, or that English painting really stands much higher than we have supposed when comparing the average of our own exhibitions with the average of what must manifestly have been *picked* exhibitions of Continental art. The London Committee of the Society includes Mr. Alma-Tadema, Mr. Marks, and Mr. Pettie. Are we to conclude that these gentlemen (for we may now consider Mr. Tadema as an English painter by adoption) are engaged in a grim joke on the pretensions of Continental schools, and are really taking a roundabout way to recommend English art to our more favourable consideration? It looks rather like it.

There is, however, one section of the exhibition which has a special interest; that is, the collection of water-colour sketches made during a tour in the Holy Land and in the Tigris and Euphrates Valley, and some other of "the contagious countries," by Mr. Tristram Ellis, another member of the London Committee. These do not, it is true, anywhere reach the highest mark of water-colour art, but they are hardly put forth with that profession. They are bright and clever topographical sketches of scenes and figures made on the spot; and if, as we are assured, they have been very little touched upon afterwards, and are almost as finished on the spot, they show unusual power and readiness in handling, and they produce the impression of being very accurate transcripts from nature as far as they go. Mr. Ellis has a bold and free water-colour style, and appears to be equally ready in the sketching of all classes of scenes,—the cedars of Lebanon, the ruins of Baalbec, or the blue Mediterranean and its shipping craft. Apart from the artistic merit of the sketches, the collection is exceedingly interesting for the information it conveys as a whole, and is quite worth a visit. But this obviously is apart from the professed objects of the Society. With the latter, as we have said, we entirely sympathise; but they must be carried out to much better result than this first exhibition shows, if the game is to be worth the candle.

## THE EDDYSTONE LIGHTHOUSE.

OUR readers will be surprised to hear that the actual building of the new Eddystone Lighthouse, so far as the masonry is concerned, will be completed in a month or so,—much earlier than was anticipated. The whole of the stone-work of the lighthouse is, in fact, not merely constructed, but in the hands of the actual builders, whose work consists in conveying the already-prepared blocks to the reef, and fitting them in their places there. The contract for the provision of the stone and for the construction of the lighthouse was taken by Messrs. Hugh Shearer & Co., of Great George-street, Westminster, the owners of the De Lank granite quarries, near Wadebridge, and of granite quarrying rights away to Rough Tor, over an area of something like twenty square miles. The stones have been wrought in a yard at Wadebridge, where every one of the 2,200 of which the lighthouse is composed,—they weigh in all 6,000 tons,—has been brought to the precise dimensions required, the whole of the structure being built up section by section preparatory to its shipment. This work has now been brought to a close by Messrs. Shearer & Co. six months before the expiration of the time allotted in their contract, and the last stone of the outward curve of the top gallery was dropped into its place in the presence of Mr. Douglass, the engineer of the work, who congratulated Mr. Shearer upon the style in which the contract had been executed. The De Lank quarries had been specially selected for their capacity of producing blocks of the finest grain and quality, and of the largest size. The completion of the work by the present date is a matter of great importance, as it will enable the fitting of the lantern to be proceeded with almost at once. Much, of course, will depend upon the progress which has been made in the metal-work and in the construction of the lighting apparatus; but the probability now is that the new light will send forth its rays at least twelve months before the period which a short time since was thought possible.

Messrs. Shearer have now fully established for themselves an enviable reputation in connexion with lighthouse work. The lighthouses of the Great and Little Basses, Ceylon,—executed at the Dalbeattie granite quarries of Messrs. Shearer, Field, & Co.,—were also carried out much to the satisfaction of all concerned, as in the present instance well within the time named in the contract. The stones for the Eddystone have, of course, varied somewhat in size, but those of the base may be cited as fair examples, and they are each 6 ft. 6 in. deep, 2 ft. thick, and 3 ft. 10 in. on their outer circumference. Of such blocks as these, and of much larger dimensions, of the finest and most even grain, and without a flaw, De Lank yields an almost inexhaustible supply. The way in which De Lank has thus been brought into prominence will exercise an important influence upon the project for extending railway communication to Padstow and Wadebridge; for the De Lank granite quarries, if adequately supplied with carriage facilities, seeing the ease and cheapness with which they can be worked, are likely to be called into requisition for the supply of very distant parts of the kingdom.

We are not surprised to hear that Messrs. Shearer propose to change the name of their property, which will henceforth be known as the Eddystone Granite Quarries.

**Wimborne Minster.**—The ancient minster of Wimborne in Dorset—a Norman structure—is to be restored. The estimated cost of the whole work required is £3,000, and the transepts alone will cost about half that sum. A committee has been appointed to carry out the work. The repairs to the central tower are to be proceeded with first.

# GENERAL CONFERENCE OF ARCHITECTS, 1881.

WE this week resume and conclude our report of the proceedings of this Conference, which, as seems to be the opinion of everybody who attended it, was very successful indeed, taken as a whole.

## QUANTITIES.

We complete our very copious report of the proceedings of that section of the Conference which dealt with the subject of quantities by giving Mr. Medland Taylor's paper and the extracts from Mr. Hughes's paper referred to on p. 616, *ante*, as having been read at the third meeting of the Conference, on Tuesday, the 10th inst.

### MR. MEDLAND TAYLOR'S PAPER

*the Importance and Advantage to our Clients of the Preparation of Quantities, and Measuring-up Works, being done by the Architect of the respective Buildings, or under his immediate direction and supervision.*

It has always seemed to me a mistake to treat quantity-taking and measuring artificers' works as something apart from, or outside of, the ordinary business of an architect's office. In turning to the address of my distinguished predecessor, Mr. Waterhouse, A.R.A., in the office of President of the Manchester Society of Architects, I find Mr. Waterhouse saying:—"It is this sense of the duties of our profession towards our clients, in this difficult question, which has always induced me to believe that the rightest plan was for the architect to have the quantity-taking of his own works as much as possible under his own control." In the Annual Report of our Society for 1878, we give our deliberate opinion in the following words:—

"In these days, owing to the almost universal prevalence of competition, it is, of course, next to impossible to get tenders from builders unless the quantities be supplied to them. The question, therefore, of the taking-out of quantities is thrown almost always on the consideration of the architect, and it is left to him to decide how this work can be best accomplished in the interest of his client. Now, your Council generally is of opinion that an architect can probably best secure this result by taking out the quantities himself,—that is to say, in his own office, and under his own supervision."

Some years ago, our Society framed and issued a set of rules for the guidance of those occupied in taking out quantities and measuring up works, one main point being so to regulate the work that all such bills should represent accurately the actual quantity of material and labour required in a building, and that such questions as "allowance" and "waste" should be left wholly to the judgment of the estimating builder. We have good reason to believe that these rules have, at least in the Lancashire district, been extensively useful in obtaining fair and just estimates, and in avoiding disputes in settlements.

Not only is an architect responsible to his client for the design of his building, and for the proper execution of the work, but a client (or most clients) will also tell you, that he considers his architect equally responsible for a due control of the outlay,—for seeing to it that the tender offered for acceptance is fair and moderate in amount, and that at the end a fair price is allowed for any omissions, and that any extras are charged at a rate not greater than that of the bulk of the work. And we, as architects, must admit that our clients have a right to expect of us guardianship of their purses, of this sort, and to this extent.

I venture to maintain that an architect who does not himself, at least, control, regulate, and supervise the quantities and measure bills relating to the works carried out by him, leaves one end,—or say a corner,—of his employer's purse not duly guarded.

We have to remember that whatever we may draw or specify, it is the bill of quantities, as priced by the builder, that really and in fact has most to do with settling the cost of any building. A contractor who had once carefully priced out his estimate from a bill of quantities would not easily be persuaded to reduce to any great extent the total estimate afterwards. I wish here to say that no disrespect to, or imputation against, those who make quantity-taking a distinct and special profession is intended. Every architect in large practice must feel what a great relief it would be to have no trouble or anxiety about quantities, estimates, measure-bills, extras, and deductions; and to leave all such matters to an independent person, if only this could be done with a due regard to the interests of one's employer. I think it cannot. In the case of quantities, however full and complete the detail drawings, they cannot, nor are they intended to, show the exact amount, neither less nor more, requisite to make "a good job" in all the various items which a builder has to price. No one, so well as the architect, should be able to tell exactly what will do,—neither too much, which is waste, nor too little, which may be dangerous or mean. The architect's judgment is tempered and corrected not only by a strong sense of what is due from him to his client, but by the recollection that if the quantities are excessive in measurement, or in description (which is as important as measurement), the estimates will be correspondingly excessive, and the drawings may have to be re-made; if, indeed, the client does not get so disgusted at the tenders as to stop the work.

On the other hand, if the quantities are deficient, and do not provide enough to carry out the work shown on the drawings and specified, the credit attaching to a really good building, well carried out in every detail, may be altogether cast in the shade and lost by an unpleasant final reckoning with the builder, or with the client, or with both.

Besides his sense of duty, therefore, an architect has strong personal interests in both directions. He has as much to fear in the quantities being deficient as in their being in excess, and thus is helped to keep a just balance. An independent quantity surveyor, on the other hand, has much to fear if quantities be deficient. But who is there to complain if they be in excess? That is, the pressure is all, or very nearly all, on one side,—and against the client. The customs of letting every measurement be "enough" or "full," as it is called, and of making the "allowances" for waste and otherwise, expected by the trade, all tend to keep the estimates up. In those few cases where the competing builders all know the exact mode of the quantity surveyor, and of the view taken of his bills by one another, the tendering may be fair enough, but hardly otherwise. When quantities represent with accuracy the amount of work and the amount and quality of labour that will be exacted by the architect in the building, then, and then only, can tenders be reliably fair as towards clients on the one side, and just to builders on the other. That this result can be attained, as a rule, when quantities are taken out by a person, however skilled and experienced, working independently of the architect's direction and control, and mainly for the builders, it is difficult to believe.

Nearly a quarter of a century ago, when working in London, I do not remember one case in which, when quantities were taken outside the office, the tenders were not greatly in excess of the office estimate; although, as a rule, the work was usually done in the end for a sum varying but little, if at all, from the architect's previous notion of what it should be. I feel confident that those architects who have pursued both plans will admit that usually, when quantities have been taken out by themselves, or under their own immediate supervision, the tenders will be moderate, and they can form a pretty accurate judgment of what the amounts will be. Whilst if an independent (and especially if a strange) surveyor is employed, the estimates are pretty sure to be high, and perhaps wide also. My argument, therefore, is, that the mode of dealing with quantities now urged is not only greatly for the advantage of our clients, but is more just to competing builders. When the case is that of measuring up work, whether it be an entire building, done by schedule of prices and measured up afterwards, or the measuring up of extras and omissions of a building for which there has been a lump-sum contract, I hold quite as strongly that it is the architect's duty to see to it.

It has not been my fortune to meet with any Lancashire man of business to whom I should have ventured to submit a final account certifying that such and such a balance was, in the opinion of Mr. Le Gros, the measuring surveyor, due to Mr. Plane, the builder. Nor do I think it right for an architect (who should be as much a man of business as an artist, and unless a man of business, brilliant artistic powers may prove unmarketable talents) thus to shirk his responsibilities, and to risk, more or less, the pecuniary interests of his employer.

An architect who personally and frequently inspects the buildings in progress under his care is usually the only man who really knows all the facts and considerations which should determine exactly what, and how much, ought to be allowed to a builder, and what deducted from him. A measuring surveyor gives way to a builder's pressure and importunity, not from improper motives, but because he is not, and cannot be, in most cases, duly informed as to the weight and strength of arguments and facts on the other side. Besides, as a clever lawyer's clerk can make out a bill of costs that one knows to be excessive, and yet cannot be reduced on taxation, so an able measuring surveyor can unquestionably make out an unassailable bill of extras, which yet may be very unjust to the proprietor and client. How can such delicate and onerous duties be entirely delegated to one more or less,—if not, as in some cases, entirely,—independent of the architect's authority and control without a danger,—I should say a certainty,—of sacrificing the interests of the client? Again, if an architect is to administer a contract effectively, he must have supreme control over money matters, or where is his power? The two separate points of the due execution of any work, and the amount to be paid for it, seem to me so bound up together that the responsibility for, and superintendence of both, must rest with the same person.

Numerous cases illustrating the position I have taken are probably within the recollection of all around me. If I described some of those that occur to me, I feel that they would strengthen my arguments, but at the expense of not keeping my promise of "a very short paper."

I hope it will not be thought that I have been too dogmatic. I confess I feel very strongly indeed that no work within an architect's province has to do more directly with the interests of his client's pocket than that of this department of taking out quantities and measuring up work. I think every opportunity should be taken of making it clear to the public that the work in question is necessary and honourable, and that an architect who gives close attention to this matter is doing his clients not the least important of the numerous services which it is his duty to render.

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The following are the extracts mentioned by us as having been read by Mr. Macvicar Anderson from a paper read some little time back by Mr. Edward Hughes before the Liverpool Association of Master Builders:—

*Extracts from a Paper on Bills of Quantities and Measuring Builders' Work, by Mr. Edward Hughes.*

I will endeavour to put into shape in as practical a form as possible, and in the plainest language, my experience and views on this subject. In doing so, if I should say anything that may appear to reflect upon the character or work of any architect or surveyor, or of any class of them, I am sure all will acquit me of the intention of saying one word in disparagement of any architect or surveyor who is worthy of the name. . . . .

A "bill of quantities" is a detailed account of the quantity, quality, and description of every portion of the work required to be done in the execution of any building, for which the person wishing to build requires to know the cost before embarking in any engagement or contract with a builder to execute the proposed work. Without a "bill of quantities" it is impracticable, in the case of works of any importance, to obtain by competition estimates or tenders for work, and it is obvious that such competition is obtained entirely in the interests of the proprietor about to build. . . . .

Who prepares the "bill of quantities"? Sometimes the quantities are prepared by the architect himself, or by his assistants in his name. In such cases this is done either with the sanction of his client or on his own appointment and responsibility, but the builders have no voice in such appointments. In other cases the quantities are prepared by a surveyor appointed by the architect or his client. Occasionally two surveyors are appointed,—one by the architect on behalf of and in the special interest of his client, and the other by election of the majority of the builders competing.

I know of only one line of argument in favour of an architect acting as his own quantity surveyor, viz., that no other person can know so well as himself what are his requirements as shown and described by his plans and specifications, nor is any other person so likely to know what changes take place requiring measurement as the work progresses. At first sight to a novice this argument appears plausible, and, with a first-class architect of large experience, it may be made to work tolerably well; but, on the other hand, there are numerous reasons against the plan, such as,—

(*a*.) The architect, as a rule, looks upon himself as the servant of his client only, and in many cases he is restricted by his client to a limit in regard to the cost of the proposed buildings. This is especially the case in connexion

with works in which architects have themselves competed; also in cases where the architect is young in the profession, and more subject to the influence that may be brought to bear upon him by his client.

(*b.*) An architect who occasionally takes off his own quantities cannot possess the experience or the facilities and special knowledge for such work as a surveyor who devotes his whole time to it, and who has been specially trained for the work, is able to do.

(*c.*) An architect in good practice has the usual daily routine of duties to attend to, which will necessarily prevent him giving the sole and undivided attention which is absolutely necessary while the process of abstracting quantities is proceeding, otherwise errors of a more or less serious character are sure to occur; nor can a measurer's duty be properly delegated to assistants any more than can the heavy responsible duties of eminent physicians or lawyers be delegated to unqualified clerks.

(*d.*) In the event of errors being discovered in the quantities supplied by the architect himself, he is at once placed in a false position. It must be most difficult for him, under such circumstances, to hold the balance fairly and equitably between himself and the builder on the one hand, and between the builder and the owner on the other. No matter how honest he may be, or desirous of doing what is equitable towards the builder, he cannot, in the very nature of things, avoid being biassed in a measure against the builder in the proprietor's favour when the opposite course would expose his own errors of quantities and thereby prejudice his client against himself. . . . .

Who should be responsible for the accuracy of the quantities? In reference to the only two parties to a contract, should it be the proprietor or the builder?

I have already shown that the proprietor, either directly or indirectly, through his architect, almost invariably appoints the surveyor to supply to the builder a list of the quantity of the various work he desires a quotation for in competition. When he accepts a tender he undertakes to pay the builder the stipulated price for the quantity of work mentioned in his application, neither more nor less. If, therefore, the quantity given proves to be deficient or in excess, it is obviously just and right he should pay the builder less or more, according to the work actually done. Otherwise, in the case of excess of work done, he obtains that excess without honestly paying for it (taking advantage of the incapability or negligence of his own appointed surveyor). If, on the contrary, there be less work done, then the builder gets paid for work he has not done.

During the progress of building, each party, under these circumstances, has a strong inducement before him to take advantage the one of the other,—the builder to omit some and scamp other work; while the proprietor (or his agent) may try all he can to take advantage of clauses in his contract giving him almost absolute powers to impose work on the builder that is not mentioned in the quantities furnished to him, and may refuse to pay for such work.

I think I may venture to assert that in no other trade than that of a builder and contractor does such a state of things exist as this, that a tradesman or merchant should be called upon to supply more goods than are bargained for at a given price without extra payment. For example, if a builder asks a timber-merchant to quote a price for 20,000 cubic feet of timber for a particular job, and the offer be accepted, and 21,000 ft. be supplied, no builder would be knave or fool enough to expect the merchant to forego his claim for the extra 1,000 ft. The same argument will apply to all materials, and labour also. . . . . .

I submit, then, taking all in all, it is to the best interests of all parties,—proprietor, architect, and builder,—that in every building contract a genuine "bill of quantities" should be prepared by a properly-qualified surveyor, at the expense of the proprietor, and guaranteed by him. This course would inspire confidence in the mind of the builder, and induce him to enter more eagerly into competition, having no fear of being misled by incorrect quantities, and having no necessity to contemplate risk and add any sum to cover errors. The proprietor would have the advantage of better competition, and generally would obtain better work and more fair dealing from the builder, who would have no interest in omitting or scamping his work, knowing that he would be paid for the work done, and no more. The architect would avoid any unpleasant discussions and disputes during the progress of the work, and after its completion. . . . .

I met with a recent case where an architect had succeeded in obtaining by competition the commission for an important public building, with an elaborate tower as part of the structure, built with dressed stone, the work being what may be described as of a "monumental" character. The quantities gave this work as so many cubic feet of stone, including all labour of every description, this phrase being on the heading and not with the quantity. The result of separate tenders for the upper part of this tower was that they varied from about 500*l.* to 1,700*l.* The lowest tenders were undoubtedly priced as stone and setting only, omitting all labour.

I have before me quantities for a public building, for which the architect's charges are 2 per cent., wherein he describes so many "superficial feet of moulded both sides, swing-doors, hung folding, including ¾-in. polished plate-glass upper panels, protected by six wrought iron bars, and patent swing-hinges to stand open." No size of glass, no size or quality of bars, and no size or quality of hinges mentioned!

In many other items he gives superficial feet of doors, including best mortise locks and rebated and moulded frames, and neither number of doors, quantity or size of frames, nor number, size, or quality of locks. You all know in the matter of locks "best" is a wide term. It means anything from 7*s.* 6*d.* to 75*s.* In one door he gives "superficial feet of door including 4-in. best butts, 5 by 4 rebated and beaded frame, two barrel-bolts, strong chain, drop-latch, lock (value 13*s.* P.C.), and approved bell-pull." Another item is—"Provide and fix cistern on strong bearers, and form trap-door," without dimensions or particulars of any kind.

In many items of this architect's quantities, in addition to jumbling up doors, locks, hinges, bolts, &c., by the foot, he hangs on the words,—"Including painting." This is notwithstanding the fact that there is a separate bill for painting. Great numbers of items of importance are given by this architect as lineal measure, with no sizes. Some items are described as "fixed," while others have added to them the words "including fixing." In the former case the builder cannot tell whether the item is to include materials or not. Another specimen is,—"Superficial feet of plain 1-in. boards (see plan)." The last two bracketed words convince the builder that quite the opposite of plain is meant; but he is to be paid plain price.

I cannot for one moment believe that the architect who has issued these quantities has personally had any hand in them, but they are in his name and he is to receive the fees, although they have most probably been taken by some impostor who had succeeded in obtaining a place in his office. I say such measuring is nothing less than a fraud upon the proprietor. This architect holds an important public appointment, and the work in question is public work. . . . .

I have known in one church contract the surveyor omitting to add up an item of 10,000 ft., being the left-hand figure of a five-figured item in his abstract for stone facings. He also omitted the whole of the dressed stone, sills, jambs, and arches to the inside of all doors and windows; the whole of the brick lining to the church, and gutters and down pipes of one side of the church; besides other items, amounting in all to the value of 3,000*l.* to 4,000*l.* This work was done by the builder without obtaining one shilling in payment.

In another case I find a surveyor describing in a bill of quantities most elaborate carved mahogany newel-posts by the lineal foot. Thus, "——— feet run of 8 by 8 Spanish mahogany newel-posts cut, turned, moulded, and carved to details to be supplied, including drops and finials where required." From this description, and by the additional precaution of an examination of the contract drawings, it is impossible for any builder to say what the real value of the work may be. It might be any sum from 10*s.* to 50*s.* per foot, according to the caprice or conscience of the architect when he subsequently designed the work in detail.

The same surveyor described doors of an ordinary size, but containing about sixteen panels each, some of them with raised panels and bolection moulds, and the remainder with cusped tracery planted on the panels. These doors were described as ordinary doors, but with the words "see drawings." On reference to the drawings they were found to be one-eighth of an inch in scale only, on which it was impossible to show what work the architect might contemplate when at a subsequent period (after the contract was made) he furnished details. Such details might show work worth any sum from 2*s.* to 6*s.*, or 8*s.* per foot, and yet be in accordance with the one-eighth of an inch scale general drawings.

I have seen in another schedule for competition a number of ornamental wrought-iron grilles or panels for doors, described simply by number, to "details to be subsequently supplied." It is impossible to approach the value of such work from such description; each grille might be worth any sum from 10*s.* to 10*l.*

In another case, an architect who was his own surveyor required a wrought-iron cresting on the top capping of some gates to the back-yard of a house, and described it by the running foot, without the height being mentioned or a drawing of any kind to show the character of the work. The builder priced the work at 1*s.* 6*d.* per foot, or 15*s.* for a 10-feet gate. After the contract was settled the architect furnished a detail that would cost 30*s.* per foot, or about three times the value of the gate itself. More than this: he claimed the right to order two additional gates and crestings to be supplied at the same contract prices . . . .

## COMPETITIONS.

We last week printed (pp. 620-22, *ante*) the eleven resolutions which were arrived at by the Conference after two sittings devoted to the consideration of this subject. We hereto append some notes of the discussion.

Professor Kerr, who presided (in the unavoidable absence of the appointed chairman, Mr. Charles Barry) over the meeting held on the afternoon of Tuesday, the 10th inst., introduced the subject by recalling attention to the memorial circulated by Mr. Cole A. Adams, and presented to the Institute a year ago by Mr. Street, praying that body to take steps to ensure united action on the part of the profession in order to prevent the abuses of the competition system. That memorial was signed by 1,274 architects, who expressed themselves willing to bind themselves not to take part in any competition unless "a professional adjudicator of established reputation" be appointed.* The signatories included men of all degrees of standing in the profession, including a large number of the Fellows and Associates of the Institute, and of the members of provincial, Scotch, and Irish professional societies, as well as a large number who were not members of any society. The memorial was duly brought before the Council, and the Institute still had the subject under consideration. The Institute had, eight years previously, in connexion with the Architectural Conference of 1872, directed attention to the subject in its "General Conditions for Architectural Competitions," which, although, so far as they went, good and to the point, were certainly capable of great improvement in many respects. The result of the presentation of the memorial by Mr. Street, last year, was the initiation, at the instance of Mr. Thomas Porter (who read a paper before the Institute on the subject shortly after the memorial was presented), of a new movement to improve the conditions of architectural competitions. A special committee to consider the whole subject was appointed by the Institute. Of that committee Mr. Charles Barry was appointed chairman, himself (Professor Kerr) vice-chairman, and Mr. Porter honorary secretary. That committee had held a great many meetings, and, without undue delay, presented a report to the Council containing certain recommendations. That report, if it had a fault, was rather too elaborate. There was a well-known maxim in literature, that the writer who exhausted his subject exhausted his reader, and that maxim had not, perhaps, been sufficiently borne in mind by the committee. But, strange to say, the Council of the Institute passed a resolution on the subject to the following effect,—That, inasmuch as the report appears to deal only with a part of the subject contained in the resolution by which the committee was appointed, it be referred back to the committee, with the request that they should consider as to the appointment of professional assessors or judges of designs sent in in competition. The committee had again reported to the Council, but unfortunately their report could not be brought before the Conference, as it was awaiting consideration by the Council. The matter, therefore, came before the present Conference in a somewhat informal manner. Mr. Porter, in his paper before referred to, had prepared some very elaborate tables as to the pecuniary results to the profession of a number of competitions extending over a number of years. Those tables went to show that a very large sum of money indeed,—taking competitions in groups, and not in individual cases,—was invariably actually disbursed by the competitors as against a very much smaller sum accruing to them in the shape of premiums and commission on the works when they were allowed to carry them out. The result, in other words, of Mr. Porter's calculations was that the whole of the profits accruing to the successful competitors was often far more than exceeded by the expenses of the unsuccessful competitors. That was a state of things which architects, as commercial and business men, could not be expected to tolerate longer than they could help. It was a great grievance, and insult was added to injury when the members of the profession were not only mulct in the expense of competing, but were treated with unfairness, and often with offensiveness, when they did compete. As the report of the committee could not, for the reason given, be placed before the Conference, he might briefly state the result of its deliberations. Two leading principles had been brought into view. One was the desire to secure fair play, and the other was the desire to secure something like,—not profit, but—payment for services rendered to the promoters of competitions in competing. Looking at the matter in a commercial aspect, both of those principles were undoubtedly sound ones. Probably some of those who had taken part in competitions might be inclined to despair of getting fair play in regard to the selection of designs,—at any rate, under generally existing conditions; and, with regard to the other point, unless the public recognised that an architectural competition was something worth paying for, architects practising in a commercial country might very fairly hesitate to continue to compete. One of the members of the committee had written a few lines expressing his own opinion to be that the system of architectural competition without direct and adequate remuneration to the competitors at large was extremely objectionable, and could only tend to the aggrandisement of some of the competitors at the expense of the others. If, however, competitions could be conducted on the principle of adequate payment to competitors for their services and expenses in competing, then, the writer thought, competitions might be encouraged, it being, however, a necessary condition that a professional adjudicator should be appointed. That, then, was the present condition of the question. Architects wanted to know whether they could get fair play in the adjudications upon competitions, and whether they could not, as a condition precedent to competing, secure promise of reasonable payment for competing, whatever might be the result of the competition as to the selection of their designs. If these two points could be conceded, then, he thought, competitions might be made of great service to the profession, and might be encouraged rather than discouraged. There were various matters of detail involved in the consideration of these points, but, broadly stated, the questions that had to be discussed might be put thus,—Firstly, whether the appointment of a paid professional assessor in competitions would not practically secure fair play in adjudication; secondly, whether, in addition to fair play in the matter of the awards, architects ought not to be remunerated to some reasonable extent for their services in competing; and, thirdly, whether, if those two points could be secured, the Con-

* The text of this Memorial, together with the names of the signatories, was printed in the *Builder* a year ago. (See vol. xxxviii., pp. 662-63, 705.)

ference would be prepared to say that architectural competitions under those conditions should be encouraged rather than discouraged?

Mr. James Brooks thought it would be rather unwise to enter upon a general discussion of the subject with so few members of the Conference or of the Institute present.* As regarded the appointment of an assessor to judge of the merits of the designs submitted in competition, the proposal was a good enough one in itself so far as it went, but something more should be done than that. The professional assessor should be appointed from the first, and should draw up the instructions to competitors. The latter requirement was quite as essential to justice being done as, if not more so than, the appointment of a referee to report on the merits of the designs submitted. He had seen a large number of conditions of competitions, which were drawn up by people who were wholly incompetent for the task, and he could only say that such conditions were often of such a character that a competing architect, instead of complying with them, had to consider what was meant by them as a whole, and to exercise his discretion in departing from them. Tested by such impossible conditions, very often the best designs would be rejected.

Mr. Henry Dawson expressed regret that the report of the committee could not come before the Conference, for without it, it seemed to him, they had no definite proposals to discuss, and the discussion must tend to be of a desultory character. He was sorry that the Council of the Institute had not duly considered the matter and issued some general heads for discussion. As to the points which the Chairman had tersely but tentatively put forth for discussion, he (Mr. Dawson) did not think that there could be much doubt that the appointment of professional assessors to adjudicate upon designs sent in would go a very long way towards securing fair play in the awards, and more especially so if the assessor's duties were to consist, as suggested by Mr. Brooks, of something more than the mere reporting upon the designs after they had been sent in. That the professional assessor's duty was limited to the matter of adjudication was, he thought, a defect and shortcoming in what was asked for by the memorial on the subject presented to the Institute last year. Mr. Brooks's suggestion, he might state, was anticipated by the report of the committee, who thought that the assessor should not merely be called in at the end of the competition, but that his duties should begin with the initiation of the competition, when he should frame the instructions to competing architects. It was greatly to be regretted that the report of the committee could not be brought before the Conference, because, although the subject had been thoroughly thrashed out by them, it would have been very desirable that their conclusions should have been laid before the Conference. The appointment of a professional assessor should most decidedly be made from the first, and he should be at the service of the promoters and of the competitors to answer all reasonable questions. When he came to examine the designs submitted, it should be his duty to rigidly exclude all that did not strictly conform to the conditions laid down; and after carefully examining and comparing the remainder, he should give his decision as to which was the best design, the author of which should be entrusted with the carrying out of the work. As he (the speaker) was precluded from reading the recommendations of the committee's report, he might, he thought, very fairly say that the recommendations quoted in the annual report of the Institute, as having been made by the Council of that body to the Glasgow Town Council (in response to the invitation of the Lord Provost), embodied all the principal points insisted upon by the committee in their report; indeed, the conclusions of the committee and the recommendations of the Council with reference to the Glasgow Municipal Buildings were practically identical. The latter were as follow:—

1. A professional man, in whom the competing architects would have full confidence, should be appointed to assist the Town Council in the preparation of the conditions of the competition, and to act as assessor and adviser throughout, such assessor not to be interested, directly or indirectly, in any design sent in, and not to be employed in the subsequent carrying out of the building.
2. In order to arrive at a satisfactory result, the competition should be one for a complete design, including both plan and elevation.
3. Considering the national importance of the edifice and the labour which the preparation of a complete design would impose on each competitor, it is desirable that a preliminary open competition should be held, consisting of drawings to a small scale only, and limited in number.
4. From the competitors in this preliminary competition a certain number, not exceeding twelve, should be selected to compete anew with drawings for the complete building.
5. The details of the conditions for both these competitions, being to a certain extent dependent on local circumstances, should be arranged by the assessor in conference with the Town Council.
6. In the preliminary competition no premiums should be offered. Those selected from such preliminary competition to be admitted to compete for the execution of the work should be paid a fixed sum, which, in the opinion of the assessor, would be reasonably sufficient to cover the expense of drawings, on condition that such finished design comply in all respects with the conditions of the competition.
7. The assessor should select the three best designs and place them in order of merit.
8. The successful competitor should be employed as the architect of the building, at the usual professional terms of remuneration.
9. Should any insuperable obstacle prevent the employment of the first-placed competitor, such employment should devolve on the second.
10. The instructions should be rigidly adhered to, and the assessor should be instructed, before considering the merits of the designs, to exclude every set of drawings which may not comply with such instructions in their entirety.

The foregoing recommendations did not include one or two points contained in the committee's report, but, failing the latter, they would serve as a basis for the discussion.

Mr. Thomas Porter said that it was due to the committee and to the Council of the Institute that he should explain that the committee's report had been sent back by the Council for reconsideration owing to the non-observance by the committee of a peculiar technicality in the wording of the reference, which was that the committee was to "take into consideration the subject of architectural competitions. . . . . in concert with other London and provincial societies." The committee had, however, thought it desirable not to communicate with other societies until the Council had expressed its opinion on their suggestions. He might add that the first recommendation of the committee was that a professional assessor should be appointed from the first to draw up the conditions of competitions and to adjudicate upon the designs submitted. Another important recommendation of the committee was that premiums, as such, should be abolished altogether. In some competitions it would be desirable that, in the first instance, architects willing to compete should be invited to send in their names. From the names sent in, a selection should be made, and those selected should be invited to join in a preliminary sketch competition. From that preliminary sketch competition should be selected the architects to compete in the final competition, all who were selected to compete in the final competition being paid for their trouble. Another recommendation of the committee was that the motto system should be abolished, except in the case of the sketch competitions. Probably the Conference and the profession at large were not aware of the insignificant works put up to competition. More than half the competitions advertised were for works under 2,000*l.* apiece, and yet, he was sorry to say, for such works as many as twenty-seven designs were sometimes sent in. Such competitions cost the profession a very great deal more than it got out of them. In three years he had made note of thirty-four competitions for works costing 2,050*l.* on an average. He had found that, in competitions for small public buildings, one set of designs was prepared for every 76*l.* proposed to be laid out. He thought it would be a very desirable thing to get all the members of the Institute to abstain from competing for all works that would cost under 3,000*l.* That was not a very great thing to ask, but it would effectually strike at one of the most serious evils in connexion with competitions.

Mr. Hampden W. Pratt said he had expected to hear from the Chairman an abstract of the report of the committee. Even in the absence of the report, and notwithstanding the thin attendance (probably caused by the fact that the morning's sitting of the Conference had been prolonged to within only a few minutes of the time for commencing the present sitting), he thought it would be a pity for the meeting to break up. He would like to know how far the meeting might discuss the points that had been laid before it in a somewhat informal way?

The Chairman said it would, perhaps, be best at first for gentlemen to confine themselves to the question whether, in their opinion, a professional adjudicator should be appointed from the initiation of a competition.

Mr. R. C. Page said the chief ground of complaint which the younger members of the profession had against the system of architectural competitions was unfairness in the adjudication. He thought it would be, if practicable, a very good plan to appoint a professional assessor from the very commencement of the competition, but the difficulty would be to get that done, because, in many competitions, the first that the profession knew of them was by the advertisements in the professional journals, after the conditions had been drawn up. He therefore did not see how the profession was to insist upon the appointment of an assessor from the beginning. He thought, however, that if the profession would combine (even though such combination might savour somewhat of trade-unionism), they would be able to secure some measure of justice and fair play by the appointment of an assessor to adjudicate upon the designs sent in upon the conditions framed by the promoters. If they were to ask for the appointment of an assessor from the commencement, they would probably get nothing. On the principle, therefore, that half a loaf was better than no bread, they must press for, and be content if they obtained, a professional assessor to adjudicate upon the designs.

The Chairman suggested whether it would not be possible, in cases where a professional assessor could not be appointed until after the instructions to competitors had been issued, to give the assessor, if called in in time, permission to issue supplementary instructions to competitors? It certainly appeared to him that it would be futile for the Conference or the Institute to lay down a lot of recommendations saying what things were desirable for promoters of competitions to do. What was wanted was that architects should combine to obtain fair play.

Mr. Page said that, although, no doubt, all the recommendations in the committee's report were admirable, it would be very difficult, if not impossible, to get promoters to adopt them. He thought a great point would be gained if it were generally recognised by promoters that in all competitions a professional assessor should be appointed to adjudicate upon the designs sent in. He did not feel so strongly on the commercial aspect of the losses on competitions as Mr. Porter and the Chairman felt. Young men who entered upon competitions for the most part did their own drawings. Such work involved, it was true, a great deal of labour, but unfortunately most young men who went in for competitions had plenty of spare time, and the exercise which competitions afforded them was a good one. He was inclined to think that Mr. Porter's estimate of the loss entailed by competitions on the profession was in excess of the real facts of the case. He thought it would be desirable to restrict the number of drawings required, and to prohibit perspectives. On the whole, he thought that competitions, properly conducted, might be made very beneficial to the younger men in the profession.

Mr. Brooks said that an endeavour might certainly be made to get a professional assessor appointed as soon as possible after the conditions were issued, and then the competitors might make a move in the way of getting weak or defective points in the instructions altered or revised.

Mr. Dawson suggested that when architects were invited, by advertisement or otherwise, to compete in furnishing designs for a building, they should, before doing anything in the matter, write to the promoters, saying that they would be willing to compete if a professional assessor were appointed not merely to adjudicate upon the designs sent in, but to draw up the conditions of the competition.

Mr. Cole A. Adams said that, although the memorial presented to the Institute had been found fault with for not asking enough, it should be remembered that it would have been very difficult, if not impossible, to get 1,300 signatures to it if it had been more comprehensive, for on many of the recommendations made by the committee in their report there was room for difference of opinion. The memorial was drawn up with the view of securing the adhesion of the profession to the broad general principle that a professional assessor should be appointed in all competitions, and he had no doubt that if the Conference approved of that principle (as he was sure it would), and if the Institute duly formulated it, all who signed the memorial would faithfully abide by it. If that one point were gained, a great deal more would go with it, and, gradually, some, if not all, of the

* During this meeting of the Conference the number present did not at any time exceed twenty, but there was a much larger attendance at the evening meeting.

conditions desiderated by the committee would become acknowledged both by competitors and promoters. Personally he agreed with the recommendations of the committee, but, although these had been put as broadly and in as few words as possible, there was, it could not be denied, room for considerable difference of opinion upon them, and therefore it would not do to attempt to generally enforce them.

Mr. Dawson thought that a great deal could be done in the way of making known to the public the essential conditions for a successful competition by means of the provincial societies. The public, or, in other words, the promoters of competitions, should be fully given to understand that unless the conditions of proposed competitions were within certain lines, architects of repute and respectability would not compete.

Mr. Page remarked that it would be difficult to get the members of the profession to pledge themselves to an elaborate series of conditions.

Mr. Pratt said that the question of the desirability of having an assessor was generally conceded; and that being so, architects had only to act upon that principle to secure a very appreciable diminution of the evils of the competition system, for it was quite certain that the question of a fee to the assessor would stick in the throats of many promoters, and they would refuse to appoint an assessor on that account. The result would be that no architects worthy of the name would compete, and consequently the competitions would be abandoned, or would become a dead letter, and all small works would be entrusted to some local practitioner without competition, except, perhaps, a competition limited to two or three of the local men. At present he thought the only hope of the profession in the matter of competitions was in getting architects to rigidly abstain from competing when a professional assessor was not appointed.

Mr. Brooks said he had heard the question asked, What good has been done by the general regulations as to architectural competitions issued by the Institute some years ago? Well, he thought they had done a great deal of good. In his younger days he never heard of such a thing in connexion with competitions as the appointment of a professional assessor, but such appointments were frequently made now, although not as frequently as could be desired. Whether the change had been brought about solely by the recommendation of the Institute he did not know; but without doubt some share of the credit of the alteration was due to the Institute.

Professor Kerr said that probably reform in the matter of architectural competitions could be best promoted by means of a "Competition Society," of which each member should pledge himself not to compete except under certain rules and conditions. Such a society should seek to procure the appointment of professional assessors at the outset of competitions, and should do other work which could not be effected through the organisation of the Institute, nor through a confederation of the provincial societies.

Mr. Page said that such a society would be virtually a trade union.

The Chairman.—Undoubtedly. I am assuming that every man who signed the memorial would join it.

Mr. Page observed that, without doubt, very many of the men who signed the memorial for the appointment of a professional assessor would have declined to sign it but as an appeal to the Institute.

Mr. Dawson remarked that one of the duties of the assessor should be not only to say whether the amount put forth in the conditions issued by the promoters as the cost of a proposed building was adequate and reasonable (in order that younger members of the profession not largely experienced in questions of cost might have something definite to go upon), but whether the designs submitted could be erected for the sums stated by the competitors. He could not too strongly condemn the iniquities sometimes resorted to by people, calling themselves gentlemen, who took part in competitions,—nothing short, in fact, of downright lying. Such competitors knew, when they stated that their buildings would cost a given sum, that they could only be erected for that sum by scamping. Such conduct as that caused the public to hurl missiles at the profession. Certainly it should be understood that a professional assessor should do something more than adjudicate as to the awards.

Mr. Page suggested that when a competition took place it should be for an architect and not for a design. He thought that designs might be invited and sent in as at present, but that a professional assessor should be appointed to decide on the merits of the designs, and that the author of the design which he declared to be the best should be selected to carry out the work, but not necessarily from the design sent in.

Mr. Dawson and the Chairman said they could not see wherein the course suggested in that proposal differed from the course ordinarily pursued in a competition where a professional assessor was appointed.

Mr. Aldridge, of Liverpool, supported Mr. Dawson's proposal that the professional assessor should be appointed to draw up the conditions of competition. He had engaged in a great many competitions, but had never seen any the conditions of which were entirely satisfactory. As to the alleged difficulties in the way of getting the conditions drawn up by the professional assessor at the commencement, he could not understand why, when a committee or a public body decided to initiate a competition for a building, they did not do as they would do in any other matter of equal importance, viz.,—take professional advice on the subject. They should first of all settle what amount of money they would spend, and then they should consult their professional adviser as to what accommodation they could get for the money. In nine cases out of ten promoters asked for a great deal more than could possibly be given them for the amount they had to spend. He was one of those who signed the memorial to the Institute, but he had some doubt as to whether he could conscientiously pledge himself to what the memorial proposed to pledge all who had signed it. Why he was doubtful on the point was that since the memorial had been signed, professional assessors *had* been employed in competitions, but with, he was sorry to say, unsatisfactory results. Professional assessors, like all other architects, had their own idiosyncrasies and ideas, but they should not allow their own views to prejudice them against, or, at any rate, lead them to lightly pass over, a well-conceived and conscientiously-worked-out design, simply because it happened not to be in their favourite style. There was one other matter in connexion with competitions to which he should like to make reference, viz.,—the conditions generally laid down as to premiums. In nine cases out of ten it was coolly set forth that, supposing the architect who obtained the first premium were appointed to carry out the work, the amount of the premium would "merge" in the commission. That was a ridiculously unfair proposition. Why should the man who was successful in the competition be mulct of the premium if appointed to carry out the work? In that case he had to prepare new plans and working drawings. Either the stipulation in question should be abolished altogether, or premiums should be abolished.

Mr. Porter said that even at the risk of being thought to take a very commercial view of the question of the cost of competition work to the architectural profession, he could not help saying that he thought Mr. Page was putting the case very unfairly when he said that the labours of young architects in competition work were to be valued at little or nothing. It was true that there was a surprising difference in the stated cost of competition drawings. For instance, in the archives of the Institute it was recorded that the drawings sent in in competition by an eminent architect for a building to cost over 700,000*l.* only cost the competitor 10*l.*,—a statement that was certainly beyond his (the speaker's) comprehension. On the other hand, in the case of the competition for another important public building, the competitors were allowed 700*l.* each for their expenses, and he believed that most of them spent that sum in preparing their drawings. With regard to the recent Liverpool School of Art competition, he found that the competition drawings must have cost at least 1,500*l.*, so that, as the commission on the work would amount to about 2,000*l.*, only 500*l.* would come into the profession by the transaction. That was a somewhat favourable instance, for in all but a comparatively few cases the cost of the competition to the profession exceeded the amount of the commission.

At this stage the discussion was adjourned to the evening meeting, a vote of thanks being given (on the motion of Mr. Dawson, seconded by Mr. Brooks) to Professor Kerr for presiding.

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The discussion of the subject of architectural competitions was resumed at the fifth Conference meeting, held on the evening of Tuesday, the 10th inst., when, as already stated, there was a much larger attendance than at the afternoon meeting.

Mr. Charles Barry occupied the chair, and in opening the proceedings, after expressing his regret that he was unavoidably absent from the afternoon meeting, said he had been informed by Professor Kerr of what had been said during the previous sitting of the Conference, and he hoped that in the time that remained the meeting would be able to arrive at some general consensus of opinion on the chief points which naturally arose out of the subject. The matter of competitions had been engaging the attention of the Council of the Institute for some time past. The committee specially charged with the consideration of the subject had arrived at certain conclusions which had been before the Council, but which, from press of business and other causes, had not yet received that detailed discussion which they demanded. He was, therefore, unable to lay those conclusions before the Conference, and, of course, was unable to put forward any expression of opinion about them on the part of the Council. Perhaps, however, there was some advantage in that position of affairs, because the Council of the Institute had the advantage of the presence and assistance in the Conference of their brethren from the country, whom they were not always able personally to consult. The question of competitions was a national one, and, perhaps, some of the salient difficulties and evils of the competition system were more felt in the country than in London. The principal points which struck him as demanding consideration,—most of which had been referred to, he understood, at the morning meeting, and as to which the present meeting would, he hoped, be able to arrive at some conclusions,—were, firstly, the insufficient, and often contradictory, nature of the instructions issued to competing architects. Such instructions were, more often than not, drawn up by men totally unfitted for the task, and, consequently, they abounded in pitfalls for the professional men who competed. He spoke very feelingly on the subject, from having been lately consulted in regard to a very important competition, viz., that for the Glasgow Municipal Buildings. The chief difficulty in that case was that the instructions, both by plan and by specifying the height of the proposed building, absolutely defined its cubical capacity. The promoters then proceeded to name the cost of the building. They practically asked for an expensive building, although they were pleased to say that they did not include decorations, and they expected to get it at 7½*d.* per foot cube! No wonder that the competition was a failure, and that it had been necessary to initiate a new competition. Happily for the prospects of success of the new competition, some good angel had whispered to the Town Council that they might get good advice from the Institute. That advice had been sought, and the Council had made the recommendations which had already been mentioned in the course of the discussion. So much with regard to the conditions of competitions. With regard to the unfairness in adjudication, where no professional assessor was called in opportunity was given for all kinds of favouritism. No doubt the decision of the assessor ought to be binding on the promoters, but it would be difficult to secure that it should be so in all cases. The obvious difficulty was that the persons who found the money for the work, or had the control of the money, did not like altogether to abdicate the power of the purse, and were unlikely to absolutely surrender their judgment into the hands of any architect, however eminent and trustworthy he might be. As yet, architects were not quite regarded by the public with the same implicit confidence as doctors were in cases of illness, and as lawyers were in cases of difficulty. Another important question was that of premiums. The prevailing practice of offering premiums to competitors seemed to him to be absolutely vicious from every possible point of view. It was vicious as regarded the competitors, because the premiums became the prizes, or the seeming prizes, in a lottery. But the system was much more mischievous in its effects upon the promoters, for

they were led to think that, in offering premiums, they were affording some very great attraction to competitors, and they imbibed the erroneous notion that, instead of they themselves being the parties benefited by a competition, they were benefiting the profession. He therefore thought it was desirable to abolish the system of premiums altogether, and that instead of the premium system some system of remunerating each competitor should be adopted. In devising a scheme for the regulation of competitions, the Conference would not need to be reminded that the precise conditions applicable to the generality of small competitions would not be applicable in the cases of competitions for buildings of first-rate magnitude and importance. Touching the question of large competitions, he might add to what he had already said about the Glasgow Municipal Buildings that the committee of the Town Council charged with the consideration of the matter had come to a resolution recommending the municipality to adopt the recommendations of the Institute with regard to the new competition. If the municipality of Glasgow acted upon the recommendations of its committee, and of the Institute, a most important and valuable precedent would be laid down for the consideration and imitation of future promoters of competitions. Whatever results the Conference might arrive at in supplementing the general regulations for the conduct of architectural competitions formulated by the Institute in 1872, it would be important that those results should be made as widely known as possible among public bodies and promoters of competitions generally, and he had no doubt that members of the Institute residing and practising in different parts of the country would take upon themselves the duties of local correspondents in permanent official communication with the Institute, advising the Council of any contemplated competition before the conditions were absolutely settled, so that the Institute might be able to offer its assistance to the promoters by suggesting proper conditions of competition.

Mr. Bruton (Oxford) approved of the suggestion that country members of the Institute should put themselves into communication with the Council when competitions were mooted. A competition had lately taken place in his neighbourhood of a somewhat remarkable character. The Corporation of Chipping Norton, being about to form a cemetery, invited architects to send in plans for the lodge and chapels. The sum proposed to be expended on the buildings was 500*l.*, and the premium offered for the best design was 10*l.* They received some seventy or eighty designs in response to their wretched offer. The successful competitor was not invited to make working drawings, but tenders were invited on the competition design which won the premium, and that of a local builder, amounting to 510*l.*, was accepted, the work to be carried out without any specification. Subsequently the author of the selected design was invited to prepare working drawings without any further remuneration, but whether he did so or not Mr. Bruton could not say. The last competition in which he (the speaker) indulged was that for the Municipal Buildings at Leicester, but he had never been able to get repaid to him the sum which every intending competitor had, by the terms of the advertisement, to pay for the plans of the site, although the advertisement promised that that would be done.

Mr. Honeyman, President of the Glasgow Institute of Architects, said he thought the competition for the Glasgow Municipal Buildings was very instructive in many ways. It was rather creditable, he thought, to the Lord Provost and Corporation of Glasgow that they had not only consulted the Royal Institute of British Architects, but the local Glasgow Institute of Architects, which latter body had tendered almost precisely the same advice as that contained in the recommendations of the Council of the Institute already quoted. That advice was given by the two bodies concurrently and without communication with each other, and no doubt would, in consequence, duly impress itself upon the municipality of Glasgow as an authoritative representation of architectural opinion on the matter. The only additional suggestion which the Glasgow Institute made beyond those put forward by the Royal Institute was that the practice on the part of the competitors of sending about photographs and circulars to members of the corporation should be strongly discouraged, and he was pleased to observe that it was stated in the new conditions of competition that that sort of thing would be strictly prohibited. In regard to the matter of premiums, the Corporation had decided that the selection of competitors from the preliminary sketch competition should extend to not less than six or more than ten, and that each of the competitors so selected would receive 150*l.* towards his outlay in preparing the drawings in the final competition. But it should be remembered that such a scheme as that was not applicable to such small competitions as had been referred to by Mr. Bruton. It was not to be wondered at that the outside public thought that competitions were a benefit to the profession, for a very large number of the members of the profession thought so too, and he felt that it would be very difficult to eradicate the notion from their minds. Promoters would naturally do what they could to make what they would consider the best bargain for themselves by offering premiums as small in amount as possible. The competition mentioned by Mr. Bruton showed to what depths some members of the profession would go in degradation. Seeing, however, that so many of the younger members of the profession thought that competition under fairly reasonable conditions was a good thing, he was afraid that it would hardly do for the Institute to recommend that there should be no premiums offered by promoters. Undoubtedly, as the chairman had pointed out, the difficulty was how to give effect to the conclusions at which the Conference might arrive. In the case of small competitions the prospect of improvement was so hopeless that it seemed almost Utopian to expect any result to follow the deliberations of the Conference. They might secure united action on the part of the better class of architects, but when one remembered what an enormous number of architects there were in the country, one could not help being impressed with the fact that the better class of architects were in a terrible minority. The architects who were members of the Institute were also a minority of the profession, though that minority must necessarily be diminished year by year. He thought it would be of the greatest possible benefit to the profession if the membership of the Institute could be largely increased.

Mr. Aldridge, of Liverpool, having spoken to the same effect as at the morning sitting, already reported,

Mr. James Fowler, of Louth, said he was, happily, very much out of the way of competitions, but he cordially endorsed what had been said as to the necessity of having professional assessors in all competitions, and he thought that promoters should be bound to accept and act upon the decision of the assessor. He thought it was necessary that the profession should take more united action than hitherto to secure uniformity of practice, as far as possible, and to discourage canvassing and other dishonourable practices.

Mr. Waterhouse, A.R.A., said that having been engaged in many competitions as an assessor, many matters had impressed him from time to time as needing reform. It had often struck him that the instructions to competitors were a great deal too full, and bound the competitors too closely, causing all kinds of pitfalls. The most common mistake made by promoters was to ask for a great deal more than the sum which the promoters mentioned would allow them to have. That evil, he thought, might be met by not naming the cost, but by inserting a clause to the effect that the question of cost would be taken into serious consideration in examining the designs. It seemed to him that one great advantage to be gained in getting rid of premiums would be to drive it home to the comprehension of promoters that the profession did not care for their premiums, but that it did care for their work. Another thing that had struck him was that competitors often took a wrong course by sending in alternative designs. The trouble which such alternative designs gave to the assessor was enormous, and there could be no doubt that the practice in a great many instances operated very much to the detriment of the competitor who sent in alternative designs, as showing that he was not altogether clear in his own mind as to what was the best thing to do. It was a very general thing now to make the drawings in pen and ink, but he believed the promoters would very much better understand perspective drawings that were properly coloured. Architects had to do with colour, and it was their business to understand it and to be able to harmoniously arrange it. An architect might very often prove himself to be a man who understood colour and its use by his drawings; but, on the other hand, he had seen perspectives so coloured as to make it very doubtful whether their authors would not produce some very dreadful results if coloured materials entered into the composition of their buildings. Then, again, the question of morality entered into the subject of competition drawings. Many architects who would refuse to speak an untruth with their tongues did not hesitate to let their pencils tell untruths, for many a dome went up 30 ft. or 40 ft. higher in a perpective than the section showed it to be capable of rising.

Being asked how the system of preliminary sketch competitions had answered in Manchester, Mr. Waterhouse elicited some laughter by saying,—"Oh, I believe it has answered very well in Manchester."

Mr. Brooks said he was more and more convinced of the necessity of professional assessors being appointed from the very outset of the competitions. If that were done, he thought that perspectives of any kind were a superfluity, and were very often so fallacious as to misguide not only the promoters, but the people who contrived them. He was perfectly certain that competitions could not be done away with, and he should be the last, for the sake of the younger men in the profession, to discourage them. He thought, on the contrary, that competitions were to be encouraged if they could be decided on fair, honest principles. Competitions were a means of affording opportunities to young architects of thinking-out and designing something for themselves after office-hours; but as at present conducted, they were a scandal, and he thought it was the duty of the Institute and the Conference to do their utmost to put them on a better footing. He was glad to hear of the advice which had been tendered by the Institute to the Glasgow Corporation; for he thought that the circulation of the recommendations of the Institute would be of great benefit to the public and to the profession,—for both would be gainers if architectural competitions were decided upon a fair and honest basis.

Professor Kerr had listened with great interest to the discussion, and he thought the tendency of opinion was clear and sensible. He held, as the result of somewhat mature deliberation during the last few years, that if competitions could be made commercially sound, they would be capable of conferring great benefit on the public at large. He could not say that he attributed quite so much importance to the interests, or the fancied interests, of young men, as some of the speakers. He was accustomed to think that young architects were best started in business upon works of an unpretending character. He had no objection to young men, having a fair chance of advancement if they thought they could get it by entering upon some of the smaller competitions, but they should be discouraged from entering upon large competitions, which could only lead to expense and disappointment. If the competition system had any good in it, why should it not be, not merely tolerated, but directly encouraged by the profession? Let the system be put upon something like a commercial basis, and let competing architects have not only fair play, but something like reasonable payment for their services. If they went before the public and said, "We want to turn each other out of our connexions," the public would say, "Very well, we will let you do it, but you must do it at your own expense." As to what would be reasonable remuneration for competitors, his own impression was that from two to two and a half per cent. divided equally amongst a considerable number of competitors would be sufficient, and he should be very much surprised to find that, in ordinary cases, the public would object to give it. Of course, in such a competition as that at Glasgow, competitors could not expect to get so much as that, but he thought that in that case one per cent. would not be too much to give. He was very glad to see the support that was given to the proposal to abolish premiums, for the practice of offering them and of competing for them savoured of gambling. If the promoters of a competition spent 100*l.* or 150*l.* in premiums, they thought they were doing wonders; but the main thing they were doing

consisted in debauching the minds of the competitors. He thought that if the Conference could come to some resolution on the subject, the Council would be greatly aided in their consideration of the subject.

The Chairman then read a list of proposed resolutions on the subject, and after a long and desultory discussion (in which Messrs. James Brooks, Aldridge, McLachlan, Waterhouse, Professor Kerr, H. W. Pratt, Pain, Bruton, J. D. Mathews, Honeyman, Frere, Watkins, and the Chairman took part), the resolutions were agreed to in the form in which they were published by us last week (pp. 620-21), and so ended the deliberations of the Conference on the subject of "Architectural Competitions."

## MURAL PAINTING AND THE DECORATION OF BUILDINGS.

THE sixth and concluding meeting of the Conference was held on the evening of Thursday, the 12th inst., the new President of the Institute, Professor Street, R.A., in the chair, when, on the subject of

MURAL PAINTING AND THE GAMBIER PARRY PROCESS,

Mr. Ford Madox Brown read the following paper:—

My experience of mural painting is not very great, nor of long standing. Three moderate-sized panels are all that I can boast of in this direction: I began the actual painting of them little more than two years ago; but I may say that I have been thinking on the subject all my life, and I consider it one of too great importance to the country at present for me to wish to withhold from you what little I have learned about it. I will confine myself to the technical and practical side of the matter.

There are twelve panels to be painted in the large meeting-room where I am at work in the Manchester Town-hall. Each panel is rather more than 10 ft. long, by somewhat less than 5 ft. high. They are not quite 5 ft. from the ground. They are thus not very dissimilar from pictures on the line in an exhibition. Each panel has a window directly over it, and one facing it. On fine days there is plenty of light, but in the short gloomy days of winter, the paintings are best seen by gas-light, on festive occasions, when the hall is brilliantly illuminated. Some years elapsed before the present decorations were set in hand, or the method of painting them fixed on. At length, at my recommendation, that process (of Mr. Gambier Parry's invention) known as "spirit fresco," was selected. Meanwhile, however, the spaces had been filled in with a compound of lime and marble dust,—fine and hard.

Mr. Parry, in his pamphlet called "Spirit Fresco Painting," recommends a stucco composed of two parts of pure river sand to one of well-slacked lime. I do not fancy the change of sand for marble-dust would have, in itself, caused much difference, had not the plasterer trowelled the surface far too smoothly; till it was like ivory, in fact. To remedy this I had the faces of the panels cut down with grit-stone; then, to increase the absorbency of the stucco, it was, before receiving the first preparation, well heated with a gas-apparatus contrived for the purpose.

One of the distinctive features of Mr. Parry's invention, compared with the somewhat similar methods in use on the Continent, seems to be this coating of the wall, before painting on it, with some of the same medium with which the colours are ground. This preparation, which should be applied not long before the actual painting is commenced, arrests, as I apprehend, the too great absorption of the medium out of the colours into the stucco, which might end otherwise, as with Leonardo's oil-painting on plaster, in the total pulverisation of the colours on the surface. Also this medium, which consists of wax, copal, and gum elemi, is, after drying, still susceptible, even for a considerable time, of re-solution by the spirit or essence of lavender with which it is first compounded, so that the fresh colours laid on the surface are constantly re-moistening and assimilating themselves to the medium already absorbed into the plaster, thus, so to speak, striking roots there.

In France and Germany,—where a process, if not exactly identical with the Gambier Parry one, at least in a great measure analogous to it, is now superseding the old Italian fresco,—they do not coat the wall first with medium; at least, so I am told. This is cheaper, but also less scientific; but when we consider the time which these works are expected to last, we should not be niggardly in their preparation.

Years ago I tried my hand at two large specimens of Italian, or "Buon" fresco; they were destroyed, and I regret that I have not now got them to see how they might have stood.

The surface of the old Italian fresco is very beautiful, with just that even semi-gloss which, for a wall, is so desirable, looking well from every point of view. The difficulties and hindrances in its execution, however, are such that I question if many who have once tasted the sweets of the Gambier Parry fresco would think of returning to the older one.

Then there is a *sine qua non* with regard to the painting of walls in this climate,—in this smoke-bedimmed country,—a consideration not to be overlooked, and expressed in the prudent housewife's inquiry "Will it wash?"

To my own experience the Gambier Parry fresco will wash. I have tried soap and a nail-brush on a small specimen before beginning on the wall itself, and it looked as well after the operation as before. Italian fresco, whatever they may say, *will not wash*. The relative claims of stereochrome (water-glass) with Mr. Parry's method remain to be considered, but I will return to their consideration later.

Mr. Parry, I understand, can point to examples of his process of twenty-five years' standing in England. I have myself, not long since, inspected the French paintings, much in this style, by Hippolyte Flandrin, in Saint Germain des Prés at Paris, and they did not seem to me much changed since the day when I first saw them thirty-six years before.

As to the facilities for working the colours, and executing different textures and appearances in Mr. Parry's process, there seem to be practically no limits to them. Every proceeding that is applicable to oil, or water-colours, or fresco, is easy of attainment in this spirit-fresco, and, what is of great importance, every colour may be used in it. Depth of tone and brilliancy in the lights, the utmost transparency, with the height or very impudence of *impasto*,—all varieties of glazing, scumbling, retouching, or stippling—nothing seems to come amiss to it; and though certainly, if the portion in hand can be finished off at once, it will, when dry, look neater,—as, indeed, is also the case in oil or water-colour,—yet, as the drying process is never complete on the next day, the work can, if necessary, stand over till then.

This, at least, is the charming experience of the first five or six weeks' work. But after these are past, and the portions first painted have commenced drying in earnest,—then a further experience is gained; and the one quality which more than any other becomes a desideratum in the work, is strength.

To paint strongly and warmly, and, more than ever before, transparently in the shadows, proves, in fact, to be of most imperative necessity. For the colours, after a certain duration of drying, become cooler and lighter and more opaque, and ever as the months go on, paler and more opaque; so that one cannot too resolutely grapple with this tendency. This is, indeed, one of the chief difficulties of the process, and one that at first caused me some discouragement, till I got into the way of meeting it. The other, and I am happy to say the only other drawback that I have experienced in this mode of painting, consists in the tendencies of several of the colours to dry in different degrees of glossiness. For instance, ivory black will dry perfectly dead compared with every other pigment on the palette. When you walk past your painting, as the opposite windows faintly reflect in the gentle gloss of its surface, every touch of ivory black tells out like a hole in the wall. Other colours have a tendency to shine too much. I communicated with Mr. Parry on the subject, but he does not seem to have noticed the objection, and as he has not seen my Manchester works, he may possibly have never yet scrutinised his process exactly facing a row of large windows.

Now, the plan I have adopted to secure evenness of surface is that of touching the offending parts with a wax varnish, the instructions for making which are in Montabert's well-known treatise on painting. It is a recipe that I have stored in my memory for thirty-six years, and I should be much beholden to Mr. Parry if he will either sanction it, or invent us a better one. Now I cannot insist too much with you, gentlemen, on the desirableness of wall-painting being uniform and beautiful in surface. With easel pictures it is different, for no one at all used to them would look at them from a wrong angle; but, in spite of yourself you must view a mural painting from every angle and situation. Baron Leys, the great Antwerp painter, so well recognised this, that, in his decorations in the Town-hall of that city, he employed water-glass for the wall facing the windows, though for the two end walls of the same room, as also for the decorations of his own dining-room, he used gutta-percha oil,—something, it would seem, very like spirit-fresco medium.

There can be no doubt that water-glass, properly used, not recklessly squirted on (as our Maclise employed it, in the impatience of his great genius), forms the most beautiful and unbroken surface of any,—not even excepting Italian fresco, where the necessary egg-retouchings can always be detected; and stereochrome has this advantage over spirit-fresco, that while the paint in that process grows gradually weaker, in water-glass the final aspersion, to use Maclise's own words, "has the enhancing effect of the shower on the rose, dyeing its native hue of a deeper, richer tinge." But in Germany, the very country of its invention, water-glass seems to be now given up; so we must needs be content with our native process, and I for one feel nothing but gratitude to Mr. Gambier Parry for the years of labour he bestowed on his experiments, and the advantage to art in this country.

Not to detain you much longer, I will conclude with a few observations,—first, as to the kind of wall-spaces best fitted to receive paintings; and lastly, on the choice of subjects suitable for them.

The idea of a picture being naturally a movable object, and one enclosed in a frame, is so wedged into and embedded in the English mind, that though here it may sound scarcely credible, I can assure you I have been asked more than once by persons seeing me at work at Manchester, "where my picture was to be hung when finished." The fact was, that the naturally recessed panels under each window, between the richly-grouped vaulting-shafts on either side, suggested to the ordinary mind the pictures they were wont to see round rooms. Now, I do not for an instant mean to infer that such spaces are not naturally fitted to receive paintings, but I would urge that they are not the only spaces fit to be painted, and that all spaces need not necessarily be sunken panels. To my mind, to complete the decoration of this great hall, it will ultimately be desirable to paint not only these twelve panels under the windows, but the vacant irregular spaces at the two ends of the room,—one, a magnificent arched space about 40 ft. from the ground, over the organ; the other, a long, irregular space over the two main entrances, and cut into by them. The idea of pictures round a room would then be done away with, and the mural decoration of the hall perfected.

I remember, years ago, a company of young artists so impressed with this principle, that in their enthusiasm for a set of spaces, high up out of sight, and each with a couple of circular windows cut in the middle of it, they volunteered to paint the whole gratis,—and did so! But there may be a medium in perforating your pictures. The best spaces for painting are such as have no immediate deep ledges to shade the edges of the composition,—spaces of any shape that seem otherwise useless, and, if possible, spaces where the sun does not reach, for while I am at work at Manchester this same sun, decked in a little brief authority (fortunately very brief), plays momentarily such tricks with what I am painting as might make St. Luke himself weep. As to choice of subject, it cannot be too often impressed by the architects on those in authority that it should be left to them and the artist in combination. A fine event, morally or historically (let us say "The Peace of Utrecht"), does not necessarily make a fine painting; on the contrary, "The Peace of Utrecht" can never, as a picture, be but a number of men assembled together in a room, and yet to get fine painting is the chief business.

Then, again, if they will urge on the painter events requiring too many figures, it may prevent his doing justice to the work; he cannot render the expulsion of the Danes in three lines, as Hogarth drew the soldier and his dog passing through a gate. One subject they would have wished me to paint at Manchester was the opening of the Town-hall itself, with a procession of *forty thousand people, five miles long!*

On the other hand, the painter should himself be reasonable and not *too poetic* in his imaginings. "Eros reproaching his Brother Anteros for his Coldness" may be very pathetic, but scarcely to the tastes and comprehension of a Lancashire clog-wearing community; and yet the poorest and most illiterate of the rate-payers have to be thought of.

The subjects chosen for the Great Hall are representative of the history of Manchester, from the time of the Romans to the present day.

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On the other subject suggested for discussion at the meeting, Mr. J. D. Crace read a paper entitled,—

THE COLOURED DECORATION OF PUBLIC AND PRIVATE BUILDINGS.

I have accepted the title suggested to me for my paper by your secretary, because it seemed to me a very good one, as calling attention to a distinction not always observed in decoration,—I mean the distinction which should exist in greater or less degree in the treatment of buildings according to their destined use, as well as according to their proportions or character. There are, of course, distinctions which are pretty generally recognised between the treatments to be adopted, for instance, in buildings for religious services and those intended for secular uses; but beyond this, it is worth while, perhaps, to point out that what may be desirable in a private house is often unsuitable or inadequate in a public building, even where its proportions or character do not stamp it emphatically as such; and similarly, those forms of decoration which are the best for interiors of which the use is more or less public, are often those which would be in questionable taste, as well as inappropriate, in a residence.

Apart from the mere question of scale or proportion, there are several reasons for keeping this distinction in mind. One, not unimportant, is this: In the decoration of an interior for private occupation, we have always to consider that the "decoration," so called, is only one element of the ultimate result in colouring and effect. It must be such as to accord with furniture, draperies, carpets, and other prominent accessories, all of which, as well as the painted decoration, must be so regulated in colouring and design as to admit of that last touch which comes of habitual occupation, and which is generally destined to improve or mar all that goes before.

It is, moreover, to be considered that features of decoration, agreeable enough when we regard them but occasionally, may be intolerable as constant companions. Now, on the contrary, in public buildings, or in rooms for public use, the decorator must provide such colouring that no after-treatment is necessary to its completion. He knows beforehand, or should know, to what uses the place will be put; and must so provide that no lack shall be felt when it is so in use. As a rule, all such accessories as drapery or furniture are either wanting altogether, or play a much less important part in the general scheme of colour. He must not allow the want to be felt. The colouring must be bolder and more complete in itself, and must seem most complete when the ordinary use of the room occurs.

If such ordinary use involves the presence of a crowd of people in dark clothing, the fact should be borne in mind; or, if a crowd in bright or delicate colours, provision for this must be made in the colouring, just as the probable use by daylight or artificial light must also be allowed for. Again, it must be remembered that the ordinary use of many public interiors is so intermittent or occasional that the effect to be produced on the mind must be produced rapidly. In such cases we must not depend on that sort of interest which has a peculiar charm in a private residence, and by which, though but little affected on first entering a room, we are led step by step to admiration. There is probably no form of decoration so agreeable to persons of educated and refined taste as that which only presents itself at first as being "in good taste," but which subsequently reveals latent beauties of detail and harmony. And as I have used that much-abused expression "in good taste," let me pause one moment to give it a definition. Tastes may vary infinitely, but the almost indefinable quality which we indicate by the words "good taste" I take to mean "refined good sense." This is very different from "public taste," of which a clever modern essayist has said,—"I have always suspected *public* taste to be a mongrel product, by Dogmatism out of Affectation."

Much also will, of course, depend upon the purpose of the room or building, when the character and tone of the decoration is to be decided. These must be sympathetic with the room's use in any case; but if that use be a public one, a greater breadth of effect should be sought; a greater gravity of expression if the use be grave; a more obvious gaiety if the use be festal, than would be called for in private rooms. This "breadth of effect" is by no means incompatible with the most elaborate detail; but requires that the detail shall never over-master the expression of the main lines and features, nor disturb the repose. Many of you may be able to call to mind examples of decoration which are full of clever detail, but in which all is confusion. Strong colours are dotted about in patches, possibly harmonious, but without any constant or intelligible aim. Now this may occasionally be done in a private residence with happy effect, a sort of colourist's sport. I do not advocate it, but admit the possibility of its being agreeable. But in a public building any such treatment should be absolutely proscribed. In the former case you may assume the indulgence of an individual fancy; in the latter you are acting as one of a community, and must treat the community with respect, observing order and system. The more dignified the purposes to which the interior is devoted, the more carefully should the decoration be controlled by some system, and have its objects clearly expressed.

Let me define the proper aims of decoration:—

1. To express or emphasise the best forms and proportions of the structure.

2. In the absence of structural expression architecturally, to compensate for that absence.

3. In some cases to correct proportions which, from whatever cause, appear unsatisfactory.

4. To explain surfaces and contours.

5. To add interest of detail or richness of effect.

Now, although transcendent power in the artist may excuse (perhaps more than excuse) the want of strict adherence to these legitimate aims, the disregard of them will always add enormously to the difficulties of the boldest and most skilful; nor need we consider that on which genius of the first order can alone venture. The power of the artist may in some cases compel us to forgive, and almost to admire, the breach of laws founded on good sense; but even our enthusiasm will usually allow that their disregard has not really been a gain even to genius. Speaking before architects, I do not hesitate to express the belief that the most splendid exceptions (such as, for instance, the Sistine Chapel) really prove the rule, and that some expression of structural lines would have been a clear gain to the work.

In dealing, then, with an interior, let the decorator first put to himself these questions:—

1. Has it constructive features clearly expressed? And do they, whatever they be, lend themselves to a satisfactory explanation of good proportions?

2. Do the conditions of light, perspective, or other outward circumstances, make it desirable to give additional force to this expression; do the features themselves lack strength, and, therefore, need support; or, on the other hand, are they somewhat heavy, and, therefore, need reduction or subduing? Either remedy is possible if the colourist knows his art.

3. Or, again, are there no structural features to deal with? Is there an absence or insufficiency of moulded surface, so disposed as to assist the eye in its instinctive search for structural lines? Then the decorator must seek a method of supplying the want,—not necessarily by substituting colour for mouldings where mouldings might have been; but by providing paths, or stepping-stones, by which the eye may traverse the surface pleasantly, willingly, and by such routes as to discover for itself those charms of proportion, of harmony, and of art which may be there.

Having been able, we will suppose, to answer the first question affirmatively,—that is to say, having found constructive features well explaining the good proportion of the interior, the colourist will take care that all that he does shall carefully preserve those features, and keep them well in the mind of the spectator. Should they run a risk of escaping attention, either by reason of want of light, or through the presence of other attractions for the eye, he will duly emphasise them by placing them in sufficient contrast to the intervening spaces; and this not necessarily by brilliancy of colour, but by attention to the distribution of light and dark. It will usually be desirable to keep the same apparent force of relief throughout these features, increasing the emphasis where the circumstances tend to allow of the eye wandering at random.

If, however, the constructive features appear poor or inadequate, colour affords the means, in many cases, of restoring to them much of the desired breadth or vigour. We often find in buildings erected at a time when the use of colour was a matter of course, that many of the leading constructive lines would appear thoroughly poor and insufficient if unassisted by colour. I need only mention the ribs of the vaulting of the early Italian churches. In the majority of instances these consist of a single roll, or chamfered square, dividing the whole bay into four parts if the area be rectangular, or in the simplest available way if polygonal. They are made sufficient by the painted borders which support them on either side, and connect them so intimately with the pictorial or other coloured decoration of the spaces that the two appear thoroughly a part of the same scheme. It will be observed that if the proportion of rib to panel be inadequate, the border is coloured with some decision, or toned to accord with the rib; but if the rib be adequate the tones of the border are permitted to ally themselves with the decoration of the panel or space.

Coming to the third question,—the absence of structural emphasis by moulded surface,—we may observe that when coloured decoration is to be a leading feature of an interior, moulded surface may be, to a very large extent, dispensed with; and it may fairly be said that the fewer and simpler the mouldings the better will they bear treatment in colour. Where "mosaic" alone is used for the internal decoration, the finest examples are totally without mouldings. Their place is taken by coloured borders, so defined as to serve the same purpose. In order to admit of these being used where they are, in fact, indispensable, all the arrises are rounded off, and this rounding has the advantage of ensuring some play of light on the gold.

The treatment of gold grounds, whether in mosaic or not, is a matter demanding considerable care. The great value of gold in decoration is its "sympathetic" quality. More than any colour is it sensitive to the influence of adjoining colours, and it is this which makes it so valuable an adjunct to coloured decoration. A red or warm outline, or border, will impart a warmth to the whole gold ground; whereas, if the border be black or cold in tone, the gold is chilled and lowered in tone throughout.

To this quality must be added that of reflecting softly, and with a subdued warmth of tone, the colouring of the room and its accessories; thus imperceptibly blending part with part. It is well known among all practical decorators that it is far easier to bring colours into harmony where gold is used than where it is absent. The fact is that, by reflection, it imports fragments of the colour of one part of the decoration into the midst of some other portion of the general colouring in such a way, and with such modulation and variety, as to afford the most valuable of all means for what is known as "recall" of colours, an indispensable part of any pictorial or decorative scheme. And it does this with so much "play" of light and dark that it excites the same sort of interest as that which we experience in watching the changes of colour on the sea as the clouds pass over.

Reverting again to the question of proportional structure, and the colourist's dealing therewith, there are numerous cases in which the interior has, either by intention, by want of means, or other circumstances, been left with its leading features too cumbrous, too bold, or simply too plain for the size or character of the whole. In some cases it will be necessary to consider how to deal with the coloured ornamentation so as to somewhat repress the excess of such features. This may generally be done by keeping the depth of colour more nearly that of the intermediate surfaces than would be the case if expression were the object.

Thus, if we suppose a ceiling to be divided into small blue panels by very wide beams or margins, the effect will not be unpleasant if the beams are of brown wood; but should they be of some white tone, the disproportion would be at once painfully apparent. Precisely the same case

often arises with the proportions of doors and their architraves, dados, cornices, and other features of ordinary rooms.

Where a room is of full height its cornice may often advantageously partake of the colouring of the ceiling in point of strength; but, if the room be low, every means must be taken to make it a part of the wall by keeping its colouring allied to the wall rather than to the ceiling, lest the eye be stopped before it has surmounted the cornice. In this latter case, the strongest contrast must be placed as high up in the cornice as there is any convenient place for it. In some cases it is possible to continue the same strength of colour into the ceiling itself and so to avoid any sharp demarcation.

The ornamentation is no less important than the colouring when dealing with proportion, and its distribution is a matter of at least as nice judgment. It is quite possible to disturb the sense of simplicity by a very small amount of ornament, as it is also possible to retain the effect of simplicity even where ornament has been freely used. When but little ornament is used it should be strictly confined to those points or lines which it is desirable should be noticed. The ornament will then help to decide the impression of "scale" in relation to the whole interior. If too small, it will produce a sense of feebleness; if too large and unbroken, it will give a sense of coarseness. It may be taken as a rule that the less of ornament there is the more important it is that its position, form, and proportion, be carefully studied.

I have spoken of ornament looking coarse. Yet it is quite possible to make use of large and bold forms of ornament on spaces of very moderate dimensions. The coarse effect may be avoided by having a "secondary" finer ornament drawn within, or interlaced with the larger forms. The finer line must be the one to break into complications of movement and curve. It never answers to make very thick and heavy lines break into very lively or elaborate contortions. There is something of the dancing elephant about such ornament. Where breadth and substance of line are used, the movement must be in dignified and measured curves, or in forms capable of geometrical analysis, whilst the lighter lines perform within or around them, with a freer and less trammelled gaiety.

So far we have been dealing with general principles. I propose to devote the remaining time at my disposal to the consideration of practical treatment, especially when applied to the interiors of buildings having defined uses.

In speaking of the decoration of churches, I propose, for the sake of brevity and simplicity, to omit all mention of those of "Gothic" character, and to confine my remarks to those which, because less attractive to many of us, deserve some careful thought as to how they may be rendered more harmonious to their use, and more in sympathy with the religious side of our minds and senses.

Dignity, harmony, repose, are, perhaps, the first qualities we seek in the interior devoted to religious worship, whether it be large or small. The last-named quality, that of repose, can be best secured by a firm and undisturbed expression of the leading forms of the structure. The mind is thus quickly set at rest, and relieved from that "instinctive search" for structural expression of which I have before spoken. However lavish the ornament, it must not interfere with this first requirement.

As to "dignity" of colouring, it is, perhaps, more difficult of definition. It may be attained by light and simple tones if the building has already noble features; but it often happens that these are insufficient or imperfect, or that the light is too diffused to afford any of those effects which arouse our sense of interest. Then a bold colouring, if skilfully handled, is of great value. Rich and tolerably pure reds, warm greens and browns, blues carefully modulated, and the mellowing gold, with its explanatory lights and rich reflections, are among the hues which first present themselves; nor must we forget those touchstones of colour, black and white,—indispensable, the one to purify, the other to intensify, the colours employed. Tints of any of the purer colours,—that is to say, pure colours having a large admixture of white,—are inadmissible. Indeed, I would say of the interiors of places of worship, that the lighter the hue, the less pure (or the more subdued) must be the tone.

The use of pictorial art and of stained glass will each suggest some restrictions or modifications in the colouring. The employment of both together has often been deprecated; but I confess that I can call to mind many a building containing both, from which I should be sorry indeed to exclude either. I would suggest, however, some attention to the following rules where both are used: (1) The relative positions of stained glass and picture should be such that the tinted rays of sunlight would never, or rarely, fall directly on the painting; (2) there should be a free use of white with the coloured glass; (3) the paintings should be pure in tone, and simple and expressive in drawing.

The conditions which are offered to the colourist by places of amusement are of a totally different kind. We frequent them to shake off our cares, our dignities, and the daily rule of life, and desire that the little world then around us, and ourselves, shall look happy, pleasant, and free from care. Not only, therefore, must the place in which we meet look cheerful, but we ourselves must look pleasant, especially that majority who have "complexions" and are "dressed."

A great deal has been said and written about the colouring of theatres; but so far as colouring goes, the theorists, when they have differed from accepted practice founded on experience, have been wrong. Chevreul goes into the question in detail, and proves to his own satisfaction that crimson is a bad colour for the interior of the boxes, as tending to give the complexion a tinge of the complementary green. He advocates a pale green, therefore, for the interior of the boxes as enhancing the rose tints of the complexion. He thinks that the fronts of the boxes have a much more remote effect in this respect; but that the cushion should be covered in green velvet.

Now, here experience tells us that he is absolutely wrong from first to last; as he is, indeed, constantly wrong when he is discussing the effects of colour on "complexion." In this very matter he appeals to results of experiments made on flat surfaces with uniform tints; and he is, therefore, in no position to judge of effects in which one colour is in deep shadow, another in strong light, the object to be influenced being a quite uncertain quantity as to depth of complexion, colour of costume, and degree of shade. Green lining to the boxes, and particularly green cushions on the front, would be fatal to four out of five complexions and costumes. There is no colour at all equal to red,—and especially red in shadow,—for setting off to advantage a variety of complexions and costumes. The too red complexion is toned down by contrast; the pale borrows colour by "sympathy,"—a very important factor where the human face is concerned. Besides this, the shadows are all warmed by reflection, and it is cold shadows, not cool lights, which are detrimental to a face. Then Chevreul underrates the value of the box-fronts as colour. The arguments which he brings to bear on the interior are really applicable to these. Consequently a light colour which shall not be either so light or so pure as to injure, by contrast, the whites of the costumes; and which shall yet set forth the colouring of the faces (which are in the same plane), will be found best. This may be relieved by gilding, and by neutral tints or coloured ornament sufficiently broken up to afford only a neutral result,—a soft and light contrast to the darker interior.

For rooms devoted to music or dancing, the conditions of colouring are not so similar to those for theatres as might at first appear. In the theatre the lighting of the audience is direct, the background being in shadow. In the ball-room or concert-room the light is to a great extent reflected from the walls, and will partake more or less of their tone, unless the sources of light are distributed pretty equally around the walls themselves.

In a room hung with green silk, for instance, and lighted only, or mainly, by a central chandelier, all that side of the face which is in shade from the chandelier will be tinged with the green light reflected from the walls. It is therefore always desirable to distribute the sources of light, both to obviate these reflected tints, and to diminish all shadow. It is also very desirable to employ such tones of colour as readily reflect light, and light rather warm than cold. It must, however, be remembered that many of the tints which are best for this, such as rather pure pale buffs, are apt to be very trying to portions of the costumes, especially to whites of transparent material, such as laces or gauzy fabrics, which against them become smoky in tone. A large preponderance of white (not too raw), with a liberal use of gilding, and some red (as drapery or otherwise) for the gilding to reflect, are always good. Probably no background is so effective for a ball-room as tapestry in pale tones of fairly pure colour, which the texture of the fabric always softens below the colouring of the complexions or dresses. But in a public room so costly a decoration can rarely be expected. The beautiful variations of quiet tints exhibited by natural marbles are, again, admirable. If the cost allowed of it, I would desire nothing better than to have the lower walls, to a height of some 6 ft. or 7 ft., lined with various marbles, and the upper walls in subdued white relieved with gilding, and divided at intervals with pilasters of coloured marble. The draperies, *portières*, &c., should in this case be of rich and deep colours. This again, however, is a costly decoration, and we should consider what is possible with moderate means. Very grey tones of green, broken up by soft white, and set off by reds in the draperies, are becoming if the lighting is well distributed. The whites in this case may either be softened by tinting, or by some form of delicate arabesque ornament in mixed colouring painted thereon. The reds of the draperies must, of course, be recalled, in somewhat reduced tone, in the decorations, either as margins, lines, or medallions, or by any means which may appear appropriate.

If the proportions of the room allow of it, a good system of decoration for a ball-room or concert-room would be one by which the colour intended as back-ground to the company would be carried only high enough to serve that purpose, and the larger surfaces of wall from which light would be reflected would be kept in light and somewhat warm tones.

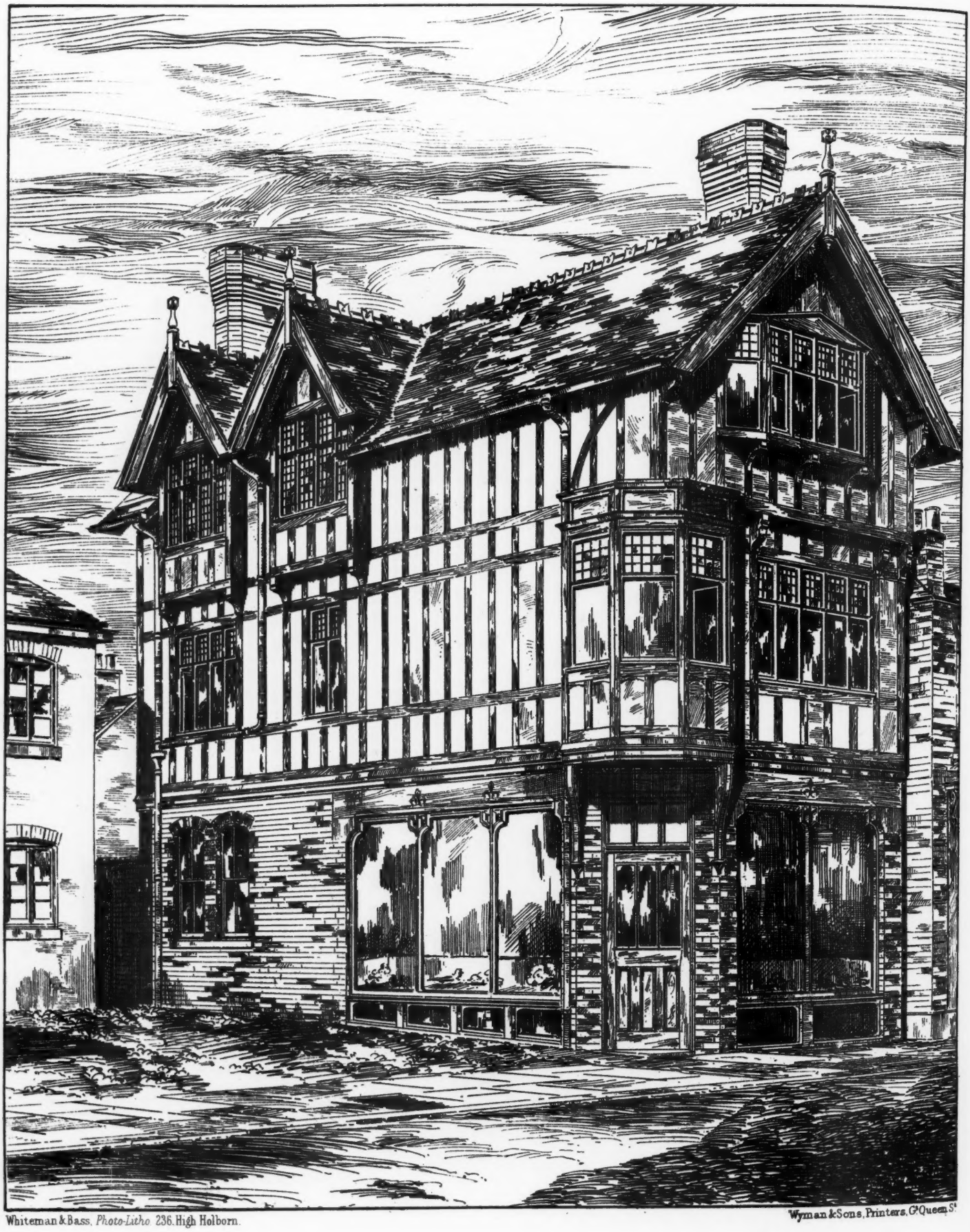
In the case of smaller rooms used for similar purposes (only occasionally) in private houses, the great point to attend to is the even distribution of light. A wall with some depth of colour, if not too gay, may be made a very effective background. But care must be taken, in that case, to light up the company and not so much the walls. For a dinner party a dark wall relieved with pictures is much the most effective and becoming; because, the table being well lighted, the faces are all well lighted; the reflection from the white cloth prevents all heavy shadows on the features, and the dark background purifies the tones of the complexion. Moreover, the alternation of the black coats of the men performs the same service with very great advantage to the ladies at table.

I must touch on one other form of public building, because it is too important to leave unnoticed.

The colouring of the galleries in museums, whether for the exhibition of pictures, sculpture, or miscellaneous objects, is a very long subject; and I will only briefly allude to a few of the main points to be considered. For pictures, which, of course, vary greatly in tone, and contain each a complex arrangement of graduated colour, there is no background equal to red. This must be neither too subdued nor too dark, if the pictures be hung near together; but where much space is left between the pictures a duller tone may be preferred. Marbles are excellent for the architectural features; and gilding also, if confined to structural lines. All whites must be lowered, for if too crude they diminish the light in the pictures. Bronze is very useful in the accessories.

The colouring thus indicated is likewise adapted for sculpture, though some modifications may suggest themselves. Chevreul fell into the same error about sculpture-galleries that he did about theatres, and for the same reason. He forgot to take into account the secondary light, which is that found in the shades. He thought that, by painting the walls blue-grey or green, the statues would assume the warm tints of the complementaries of those colours. This would be true if the white forms of the statues were flat bas-reliefs in the same plane as the walls, or rather if there were only one wall. But it must be remembered that we are dealing with spaces surrounded by walls, and that light partaking of their colour is being reflected from all of them. And the more diffused the light, the greater the effect of the "secondary" or reflected light which is found in the shades. The secondary light always partakes of the complementary of the direct or primary light, consequently green or bluish walls will inevitably impart a cold or green tone to the half tints and shadows.

On the other hand, where a statue is well



Whiteman & Bass, *Photo-Litho* 236, High Holborn.

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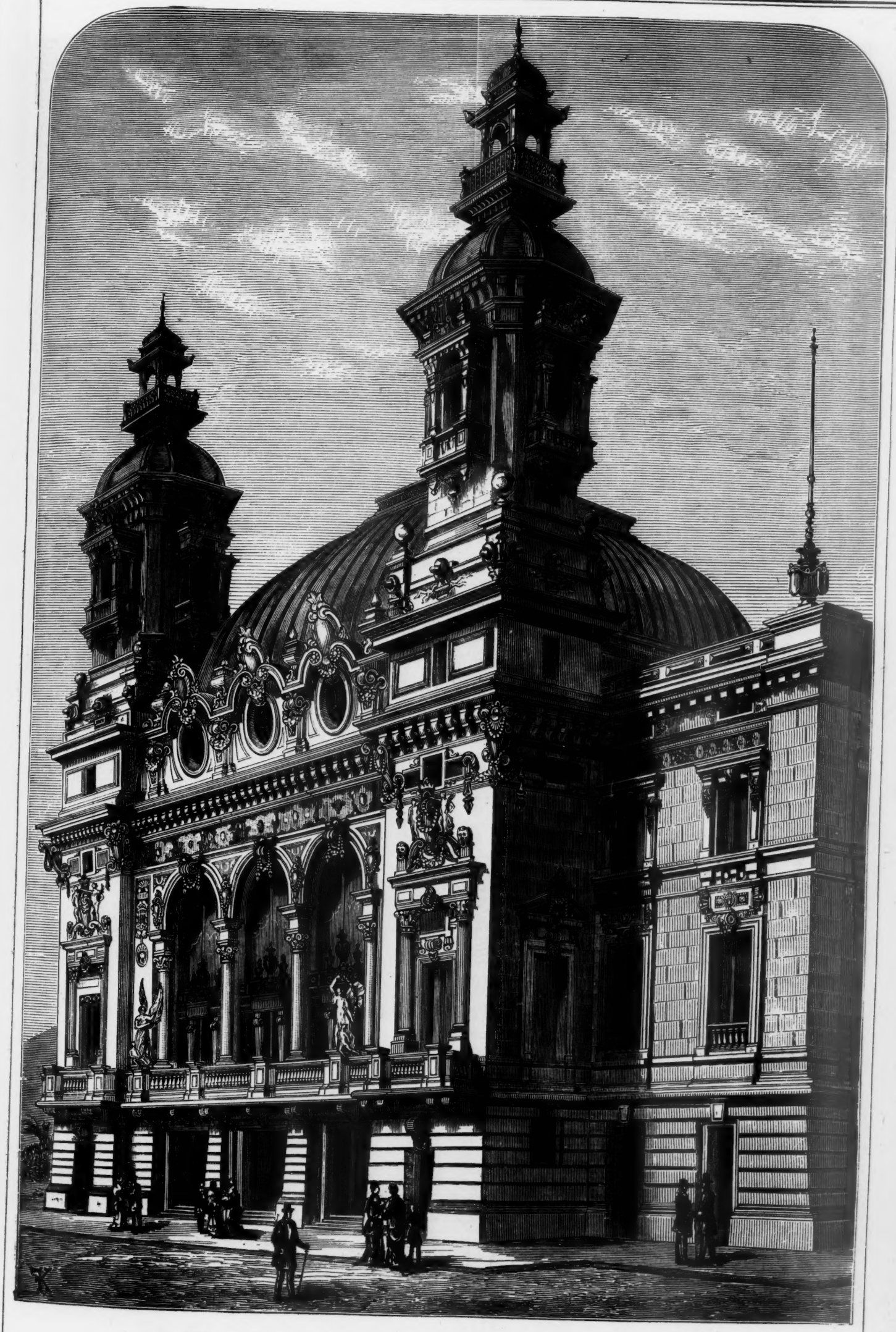
**DWELLING-HOUSE AND SHOP, ALTRINCHAM, CHESHIRE.**—MESSRS. TATE & POPPLEWELL, ARCHITECTS.

THE THEATRE OF MONTE CARLO.—Interior View, looking from the Stage.



THE NEW THEATRE OF MONTE CARLO.—M. CHARLES GARNIER, ARCHITECT.

Whiteman & Bass, *Photo-Litho* 236, High Holborn

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**PRINCE TECK BUILDINGS, EARLS COURT.—MR. G. EDWARDS, ARCHITECT.**

lighted, a background of dark green foliage, which is behind it only, is admirable. Or if the walls surrounding a statue be of warm tone, a limited background of a deep, warm green may be made effective.

Two other items of a sculpture-gallery must be considered,—the floor, and the pedestals or bases on which the statues are placed. The floor may be white, or white and black, if the walls be of warm and full colour; but if the walls be pale, the floor may advantageously be of a dark, warm tone, such as maroon or rich brown. In the latter case the pedestals may be of some green tone, for the statues will derive some advantage in the direction of the complementary. If the walls be red, a grey marble makes the more satisfactory pedestal, or at least a marble containing much grey. In these observations I have throughout considered especially modern sculpture. Antique marbles have usually acquired so much warmth of tone as to make it less important to enhance that quality.

In a museum of miscellaneous objects, or of natural specimens, we come to an entirely different set of conditions. Objects of this kind are, for the most part, in cases enclosed with glass, and the backs of the cases may be coloured to suit the contents of each. For such objects as china or jewelry, dark colours will be preferable; for bronzes, or dark pottery, grey is suitable; whilst for such objects as specimens of natural history, stuffed birds, fossils, or objects possessing many varieties of colouring, a pale grey tint is best. I observe that this tint has been selected for cases in the New Museum of Natural History; and I am glad to take the opportunity which the mention of this subject affords me to congratulate the distinguished and talented architect of that fine building on the excellent taste and effect of the painted decoration of the interior, which has been treated harmoniously and with judicious reserve.

On the general decoration of such galleries above the line of the inclosed cases, I am not disposed to place hard-and-fast restrictions. Nothing could certainly be less desirable than vast expanses of white. The many varieties of natural woods afford, as it seems to me, one very agreeable and suitable field of choice. In any case, the good sense of the architect will keep him within the limits of what is fitting and appropriate.

I have already trespassed at some length on your attention, and yet am conscious of having touched but briefly and imperfectly on my subject. It is, however, one in which my audience takes a greater interest year by year; and I leave its discussion to that audience with the hope that my remarks may elicit opinions of more value than mine, from those who, like myself, have found in the study of Art, and the observation of Nature, the truest instruction and the most lasting pleasure.

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In the discussion that ensued,

The Chairman observed that the Conference had had the advantage of hearing papers by two visitors, both well competent to speak on the several branches of the subject which they had taken up, and he had no doubt there were many members present who would like to ask questions or make observations with regard to some of the points which had been suggested by the papers.

Mr. Penrose said he had listened with extreme gratification to the papers. He agreed with Mr. Crace's remarks in general, and he was glad to find that he advocated reserve in the decorative treatment, especially, of great and important public buildings. He wished to introduce to the notice of the meeting another claimant for durability in art besides Mr. Gambier Parry's process, viz., an invention by Mr. Wilkins, a landscape-painter, and author of "Visual Art" and other works. Two years ago he (Mr. Penrose) brought before the Institute an account of the process, and he now exhibited a specimen of the process, consisting of a piece of Bath stone coated in different shades of what Mr. Wilkins called "oil fresco." It was simply painted with a choice of mineral colours mixed with linseed oil prepared in a special way, but which treatment did not enhance the cost of the oil more than a few pence per gallon. The oil dried very rapidly, and might, in fact, be made to dry fast or slow, at pleasure, without the use of chemical driers. The colours which Mr. Wilkins used were entirely mineral, and they contained no whitelead or other poisonous substance. The colours would, he thought, stand well, for sulphuretted hydrogen and ordinary gases had not the slightest effect upon them. They might be produced either "flat" or with a gloss upon them.

Mr. Waterhouse, A.R.A., said he had watched Mr. Madox Brown's work at the Manchester Town-hall with very great interest, and with very strong approval. He thought he had made very great successes with his Manchester pictures. There was only one feature about Mr. Madox Brown's labours at Manchester which he regretted, and that was the small remuneration that he received for them. He could only suppose that the people of Manchester had no conception, when they made their arrangements with Mr. Madox Brown, what he was about to undertake. Mr. Brown had mentioned in the latter part of his paper that the water-glass method had been given up in Germany. He (Mr. Waterhouse) had seen some good specimens of the method in the Low Countries, both at Courtrai and Ypres, and their effect was certainly very satisfactory, the surface being perfectly dead.

Mr. J. G. Crace said it might interest the Conference if he recalled to the remembrance of the Institute some remarks he made before it thirty-five years ago, after he had been to Munich to study the fresco-painting going on there. Through the kindness of Lord Erskine, he obtained an interview with Herr Kaulbach, and received from him the following particulars of the composition he was using for his pictures, viz., 1½ lb. wax, 3½ lb. gum damar, and 5 lb. turpentine. These were properly mixed together and boiled until the substance became of a uniform consistency. The ground of the surface to be painted upon was simply, as far he could understand, one of plaster, sufficiently porous for the substance (which was merely a vehicle for the colours) to sink into the ground. It seemed to him, from what he saw of it, that the medium was a very successful one. The colours were exceedingly agreeable, and the process seemed to offer all the advantages of oil-painting without the disadvantages. The time that had elapsed since he made those observations was so long that the experiment must now have been fairly tried. How the paintings which he saw in progress looked now he did not know. He referred to those in the hall of the grand museum. There was one disadvantage in all encaustic painting, for it contained wax, and wax, if once soiled, could never be cleaned, as experiment with a common wax-candle would show. That could not fail to be a serious objection to encaustic paintings where they were likely to get soiled. After his return from Germany at the time mentioned he used wax as a medium for decorative works very extensively, but had to abandon it, for he soon found that it would not clean, and that any attempt to clean it produced a smear. He mentioned that as a caution against the employment of the wax process in smoky towns. With regard to frescoes, it was his conviction that frescoes would certainly never do in smoky towns, for the lime was too absorbent of carbon, and was difficult to be cleansed without damage.

Mr. McKinnon said he had listened with great pleasure to the papers. What experience he had had with distemper painting was against the process. In South America a species of fresco-painting was employed with very successful results. He did not agree with Mr. Crace in thinking that fresco-painting was unsuitable for this climate. Fresco-painting, produced by the process which he was about to describe, was used in South America in smoky rooms, and was easily cleaned. The lime was first of all prepared from the finest white chalk (Carrara marble would be a better material where it could be procured), being thoroughly well burned. It was afterwards slaked and made into a cream in shallow tanks. The cream was allowed to deposit, and in the course of a few days the whole of the lime was so deposited. After the lapse of two or three days, it could be cut up into pieces; it was then snowy-white. When it was desired to use it, it was mixed with a certain proportion of water, and floated on to the wall to be treated, generally to the thickness of about ¼ in. It was better to make this floating of a good thickness, as in course of time the painting would get soiled, but, as the colour was absorbed right through the material, it could easily be cleansed by scraping. The next thing was to prepare the colours by mixing with a certain proportion of town glue,—and it must be glue, not the sizey material which was always more or less in a state of decomposition. A flat wash-tint was then put on, and then followed the process of stencilling or painting the design. Stencilling was, however, only used in the case of inferior work. The better class of artists prepared their designs on tissue or other paper, pricked the main lines in it with pin-holes, and then, by placing the sheets of paper against the wall, the lines were transferred by pouncing over the pin-holes with a bag containing a fine powder. The painting then proceeded. The final process was the "fixing" of the colours, which was done by throwing on to the surface with a brush of peculiar form a fine spray of dissolved glue. He should be glad to see the banishment of wall-papers from this country, and the use, in their stead, of the process of wall-decoration which he had described. It was one which was eminently suited alike to the homes of the poorest and to the homes of middle-class people, and was cheap and easy to carry out. In answer to a question by Mr. Penrose, Mr. McKinnon said that work executed in the manner he had described was easily cleaned with crumb of bread. One caution to be observed in following the process was not to use too much glue. If too much were used the work would be liable to scale off.

Mr. Thomas Porter said he had a practical question to ask of Mr. Crace. He had observed that many painted ceilings which had come under his observation had suffered very much from the use of drab colour, which seemed soon to become very smeary, and gave the work the appearance of being unfinished. He should like to know the cause of that failure. Another point which had struck him was that, somehow or other, painted ceilings very often seemed to dwarf the rooms where they occurred, and appeared to bring the ceiling down rather than to give it that airiness which it should have.

Mr. Stannus said he had listened to the papers with great pleasure, but he had been somewhat surprised that no one had ventured to challenge Mr. Madox Brown's *dictum* that the artist and not the architect of a building that had to be decorated should choose the subject. He hoped that the painters would leave the selection of subjects to the architects. With regard to Sir Frederick Leighton's fresco at South Kensington, the granulated appearance of its surface was very noticeable, and was, he thought, objectionable, except in so far as it was necessary to afford a key for the colour. He thought that the Conference was very much indebted to Mr. Crace for the clear and systematic manner in which he had treated his subject, and he was glad to see that Mr. Crace's observations went to endorse what had been said in a paper read in that room not very long ago by Mr. Seddon, who laid down the principle that decoration should be functional, or architectonic. Although Mr. Crace's cited examples were nearly all Italian, his remarks were equally applicable to work in all styles. One question suggested by the papers and discussion was,—Would it not be possible for us in England to more largely adopt what the French called "*collaboration*" in regard to the decoration of our buildings? Would it not more frequently be practicable, and to the advantage of the work, for the architect and the gentleman whom he proposed to call in to decorate his building to have some sort of preliminary agreement as to what was best to be done? The apparent heaviness of coloured ceilings, noticed by Mr. Porter, was more often than not due to the fact that the colour which they contained was unsupported by any colour on the walls.

Mr. William White thought, from observations he had made, that black in old times was very rarely used untoned by some such colour as yellow ochre. He begged to move a vote of thanks to Mr. Madox Brown and Mr. Crace for their interesting papers.

Mr. Hansard asked whether there was any particular reason for the use of the essential oil of lavender in Mr. Gambier Parry's process in preference to any other essential oil?

The Chairman, before calling upon the readers of the papers to close the discussion, said that the remarks which had been made had hovered between the discussion of the materials and processes which were applicable to decorative purposes, and the scheme or system of decoration which should be adopted by architect and painter working in unison for the embellishment of a building. The subject which interested him most, however, was the possibility of the adoption of the kind of art which Mr. Madox Brown had been introducing at Manchester for

the decoration of public buildings generally. Curiously enough, before coming to the Conference meeting, he (Mr. Street) had been asked by the secretary of the Society of Antiquaries to attend a meeting there on that evening to hear a paper read upon some recent discovery of wall-paintings in a Lincolnshire church. He was also informed at the same time that a member of the Society of Antiquaries was now engaged in cataloguing the examples of old wall-paintings which had been discovered in England from time to time,—an enormous number. A curious fact about these old wall-paintings, which had lasted from the thirteenth or fourteenth century, was that they were in none of the processes which had been discussed, but were in distemper. Mr. Armitage informed him that, thirty years ago, he executed some paintings in a Roman Catholic church in Islington, in fresco, but it had lately become necessary that something should be done to them, and he had been re-treating them by the Gambier Parry process. In a church which he (the Chairman) built some years ago, in Westminster, Mr. Watts had painted a fresco, which, the last time he (the Chairman) saw it, was covered with a white film. The lamentable injury which the frescoes in the House of Lords had suffered was well known. Whether these failures were due to uncongenial climate he did not know. Mr. Gambier Parry's process appeared to have stood so well after a test of many years that he should be glad to see painters adopt it. Sir Frederick Leighton had informed him that the fresco, representing "The Wise and Foolish Virgins," which he painted some fifteen or sixteen years ago in the church built by Mr. White at Lyndhurst, in the New Forest, was done in two instalments, the first being painted a year before the second was done. The painter, when he returned to his work after an interval of a year, expected to find that its freshness would be gone, and that he would have to do the first portion of the work over again. That was not the case, however; for the painting had so well preserved its freshness, that all the artist had to do was to complete the picture. If that was a typical instance of how the decoration of buildings in fresco could be proceeded with at long intervals, it would be, perhaps, more easy to get buildings decorated by painters of eminence than was sometimes thought possible, for it would enable them to undertake such work without having to leave their homes for long intervals. Having referred to the steps that are being taken by the Royal Academy to promote the artistic painting of buildings, the chairman observed that he agreed generally with the remarks made by Mr. Crace, particularly with regard to mosaic decorations, which did not look well unless the building had been erected for them. He thought, however, that Mr. Crace had not taken note of the very frequently injurious effects which interior decoration had had upon Italian Pointed buildings.

Mr. Waterhouse, A.R.A., desired to second the vote of thanks which had been moved by Mr. White. He thought that Mr. Crace's remarks on Chevreul's theories were very interesting and extremely useful.

The vote of thanks was carried by acclamation.

Mr. Madox Brown, in replying on the discussion, said that Sir Frederick Leighton's fresco at the South Kensington Museum was executed exactly in accordance with Mr. Gambier Parry's process. The comparative roughness of work done by the process depended upon the coarseness or fineness of the sand used, which varied according to locality. Roughness of surface was certainly not a desirable quality to aim at for its own sake, for it afforded room for the harbouring of dust. It was a mistake to suppose that any of the great Italian frescoes had very rough surfaces. The frescoes of Michelangelo and Raffaelle, although done with great boldness, were not rough. The gloss of which he had spoken in his paper as characteristic of *buon* fresco was in no way due to roughness of surface. The reason why oil of lavender was used was that it was a more powerful solvent of gums than spirits of wine.

Mr. J. D. Crace, in the course of his reply, said he could not say why drab colours should get dirty, or appear to get dirty, quicker than other colours. He thought, however, that if Mr. Porter were correct, it was rather a warning against using dirty tones of colours at all in decoration. With regard to Chevreul, most of his errors seemed to be made when he was dealing with the human face. Probably he was too much of a chemist and not enough of an artist.

Mr. J. Macvicar Anderson, Hon. Sec., in felicitous terms, moved a vote of thanks to the Conference Committee and Sub-committees for the excellent arrangements made for the meetings and visits. This was seconded by Mr. William White, the Secretary, who made special allusion to the labours of Messrs. R. Phené Spiers, T. W. Cutler, and Hugh Stannus, in making arrangements for the *conversazione*. The motion was carried with applause.

The Chairman added that the Council would take care that proper acknowledgments for the facilities afforded for the visits should go to her Majesty the Queen, and to Sir Frederick Leighton, Sir Richard Wallace, Messrs. Doulton, and others.

Mr. Morham (Edinburgh), and Mr. Mitchell (Oldham), having expressed their thanks to the Council of the Institute for the way in which the provincial and Scotch members had been welcomed to London, the proceedings of the Sixth General Conference of Architects were concluded.

### VISITS MADE DURING THE CONFERENCE.

*Buckingham Palace.*—The first item on the programme for Monday, the 9th inst., was a visit to Buckingham Palace, where the pictures were the principal attraction, although the State apartments of her Majesty received as much attention as was possible in the limited time available by the numerous visitors, who were escorted through the Palace in detachments of twenty or thirty, by instructions issued from the Lord Chamberlain's office,—doubtless for some good reason.

*City Churches.*—On Monday afternoon, as already stated, a large number of visitors assembled in the Chapel of St. Etheldreda, Ely-place, Holborn, within the last few years restored and converted to its original use. Here Mr. George H. Birch read a paper descriptive of the building and of the historical associations of the place. At the Priory Church of St. Bartholomew, Smithfield, next visited, it was pointed out how neglectful ages had suffered the encroachment of private properties (one of them a fringe factory) over the eastern ambulatory and other portions of the church. Mr. Birch here again read a paper full of interesting architectural and historical details; and Mr. Tavenor Perry said a few words descriptive of works of improvement that were effected in the church in 1864. Previously to that time the floor of the church was 3 ft. 6 in. higher than it is at present. St. Giles's, Cripplegate, was next visited, and briefly described by Mr. Birch, who mentioned that it was built in 1535 (*temp.* Hen. VIII.), and was, therefore, very late. The present roof is entirely modern. The church derives its chief interest from the fact that John Milton was buried here, and a monument erected to him within recent years from the designs of Mr. Edmund Woodthorpe (by whom the restoration of the church has been carried out) was inspected. Speed, the historian, and Foxe, the Martyrologist, were also interred in this church. The Priory Church of St. Helen's, Bishopsgate, was the last item on the programme, except Crosby Hall, which was visited by some of the party. St. Helen's, which has before been described in our columns, is full of interest, and contains a large number of interesting tombs, including those of Sir John Crosby and Sir Thomas Gresham. Mr. Birch pointed to the evidence afforded by the architecture that the original level of the floor of the church was some 3 ft. lower than it is at present, the level being raised during the works effected in Crosby's time.

*The Royal Courts of Justice* were, as already mentioned by us, visited on Wednesday, the 11th inst., under the guidance of Mr. Street. In addition to what we stated last week, we may mention that Mr. Street said that the *flèche* over the roof of the Central Hall, which was cut out by Mr. Ayrton when First Commissioner of Works, would be erected. The vaulting of the roof of the hall has been commenced. Mr. Street stated that a saving of 4,000*l.* or 5,000*l.* had been effected on the eastern block of buildings, and that sum would be spent in the *flèche* aforesaid, and in carving and some other matters. Mr. Street caused some amusement by saying that the carving will include a number of figures emblematic of the virtues that should be possessed by lawyers, besides some that the clients would need, such as Strength, Fortitude, &c. He also expressed the hope that at some future period the central hall would be adorned with sculptures and mural paintings. It is expected that the buildings will be completed at the end of the current year.

*Messrs. Doulton's Potteries* at Lambeth were visited on the 12th inst. Here the members saw much to instruct and interest them. For those of them (if any) to whom the name of Doulton was only suggestive of drain-pipes, a pleasant surprise was in store; for in a number of rooms were to be seen at work ladies who, with quick and delicate touch, were engaged in ornamenting, in relief, vases and innumerable other articles of the now celebrated Doulton ware. These ladies are all pupils of the Lambeth School of Art. Another interesting room is that occupied as an *atelier* by Mr. Tinworth, whose facility as a modeller will be known to frequenters of the Royal Academy. Several panels for reredoses, &c., were in hand at the time of the Conference visit. In other parts of the buildings were to be seen in progress all kinds of stoneware pottery, and innumerable architectural details in terra-cotta for buildings now being erected, under the direction of Mr. Waterhouse and other architects. Messrs. Doulton's show-rooms, a little higher up the river, facing the Albert Embankment, contain a large variety of sanitary appliances and fittings of all kinds, besides quite an exhibition of Doulton ware, and of works in terra-cotta modelled by Mr. Tinworth.

The last visit was that paid to Hertford House, Manchester-square, where the visitors were hospitably entertained by Sir Richard Wallace.

### THE CONVERSAZIONE.

Many interesting objects were contributed by members and friends, and it is only fair that they should receive acknowledgment. Thus,—

Mr. W. H. Michael, Q.C., sent a picture of autumn flowers by Jules Goupil; a landscape by Heffner; a study of a head by Zimmerman; and three cases of remarkable carved jade, Chinese snuff-bottles, and Japan lacquer. Professor Street, R.A., President, "The Old Manse," by Fred. Walker, A.R.A.; and eight pictures by Mr. E. Burne Jones. Mr. Hal. Burrow, two suits of armour and a number of drawings. Mr. W. Burton, some fine water-colour drawings by Cattermole, David Cox, and De Wint. Mr. W. De Morgan, plates and jars of lustre ware. Sir Fred. Leighton, P.R.A., three charming specimens of his own work, some old Japanese pottery, and ancient embroideries. Mr. Val Prinsep, A.R.A., Chinese bowl, brass jars, and specimens of Indian and Persian embroidery. Mr. G. T. Robinson, Japan lacquer-work and pottery and ancient Hozen plates. Messrs. Lazenby Liberty & Co., carpets, rugs, and ancient embroidery. The Misses Spiers and Welby, decorative plaques, hand-painted, and very well painted, too. Mr. Colvile Brown, Japanese silk pictures and Kakemonos. Mr. Ernest C. Lee, President, Architectural Association, a series of forty photographs of the works of the late Mr. W. Burges, A.R.A. Mr. Alfred Marks sent the photographs of the Society for Photographing Relics of Old London. Mr. Thomas Cutler, three cases of Japan lacquer, embroidery, and pictures. Mr. R. Phené Spiers, a large number of water-colour drawings of Holland, Brittany, and other parts of France, Japanese lacquer, pottery, and other specimens of Japanese workmanship. The Duke of Sutherland, two oil-paintings; and Mr. R. W. Edis, F.S.A., pictures and water-colour drawings.

## THE THEATRE OF MONTE CARLO.

THE theatre of Monte Carlo, with its marble columns and rich ornamentation glistening in the sun, relieved by a background of blue and purple mountain; below, a vegetation tropical in richness and splendour, looks like a jewel in a gorgeous setting. The surrounding country, special in aspect, reminding one of Cadiz or Malaga, it became necessary that the architecture of the theatre should, in some measure, be in accordance with the designs usually employed in those countries. M. Charles Garnier, the architect, therefore, surmounted the building with two characteristic steeples, which, though approaching the Spanish style, are yet in harmony with the rest of the building: thus dignity is added to a façade already light and picturesque, three qualities difficult to combine, but which the architect has shown is not impossible. Two marble groups (placed on the stone balcony running along the front of the edifice) representing "Dance" and "Song" are due, the former to M. Gustave Doré, and the latter to Mdlle. Sarah Bernhardt.

The building being nearly as large as the Paris Opera House, and having to perform the double duty of theatre and concert-room, M. Garnier determined that it should not resemble an ordinary *salle de spectacle*, but rather a grand luxurious hall, in which splendour should be the reigning characteristic; the ornamentation, from entirely original designs, is, therefore, rich, plentiful, and varied. The idea of the administration was that the new building should be an art-structure, and not an affair of speculation; consequently they gave *carte blanche* to its architect,—it was to cost what it might. The hall, with its spacious orchestra, its absence of boxes, excepting the one reserved for the Prince of Monaco, its immense glasses, its ample gold brocaded curtain and velvet and silk draperies, would, from its elegance, appear to form part of a sumptuous palace. The flooring is constructed on an incline, so that both actors and singers may be seen by every spectator, while for balls and *soirées*, a second movable floor is placed upon the first. The archings of the roof, measuring 15 mètres by 6 mètres, are decorated with paintings representing "Song," by M. Fegen Perrin; "Comedy," by M. F. Lix; "Instrumental Music," by M. Gustave Boulanger; and "Dance," by M. Georges Clairin. The design, colouring, and execution of the two last subjects are especially worthy of note. Some remarkable decorative panels, representing the months, by the last-named artist, may be seen in the "Salle de Danse" at the Paris Opera House.

Our illustrations are engraved from documents kindly lent by M. Garnier expressly for the *Builder*, aided by some excellent photographs, placed at our disposition by M. Durandelle, photographer.

## HOUSE AND SHOP IN ALTRINCHAM, CHESHIRE.

THIS building occupies a prominent position in George-street, Altrincham, and has been built for Mr. J. G. Richmond, who is resident in the neighbourhood. The lower portion is in selected white ends, with stock dressings, and the upper (as shown) in the old black-and-white style. The contract for 557*l.* was let to Mr. Martin Stone, builder, of Altrincham; and the architects are Messrs. Tate & Popplewell, of Manchester.

## PRINCE TECK BUILDINGS, EARLS COURT.

THESE buildings have recently been erected on the site of some small cottages in North-row, Earls Court. The upper stories are arranged in three sets of flats to each house, each containing three rooms, kitchen, and scullery, w.c., sink, dust-shoot, &c. The shops on the ground-floor are quite separate, and have three rooms attached to each; these are all occupied by the Earls Court General Provision Stores.

The front elevation is faced with Burham pressed bricks, and moulded brick strings, cornices, and quoins, and Pether's diaper brick panels. The window heads and sills and the pilasters are of Box-ground stone.

The work has been executed by Messrs. Martin Wells & Co., of Aldershot and London, at a cost of about 7,000*l.*; the carving was done by Mr. J. Wormleighton. Mr. George Edwards is the architect.

## ARCHITECTURE AT THE *SALON* OF 1881.

WHATEVER may be said of the pictures at this year's *Salon*, and there are many that are entitled to notice, the rooms devoted to the architectural drawings,—for there are two large rooms and considerable space in the gallery outside,—can scarcely be spoken of too highly in respect of one portion of their contents. The great care shown in the arrangement of these rooms may be owing to the fact that the painters, with judicious regard to their own interest, and an absence of that often-referred-to ill-feeling that is supposed to exist between the professors of the sister arts, very early in the organisation of their new Society elected M. Bailly, the eminent architect, as their president, and we may consider that it has been mainly due to his powers of keeping committees harmoniously to work that the affairs of the *Salon* and of the new Society have arrived already at their position with the smallest amount of friction.

The most accomplished architect, or the merest amateur of the noble art, could not fail to appreciate, on visiting the architectural section of this year's *Salon*, the exceedingly striking and beautiful work there exhibited. Without attempting any criticism,—always so difficult when speaking of foreign works,—of the numerous "projects" exhibited, we may say that they may all be roughly designated as belonging to the kind with which we are all more or less familiar. Whenever French architects are the designers, there can be no two opinions as to the exceptional beauty of those representations of the great works of past ages in which France is architecturally so rich, and that are here shown in numbers. In each year's *Salon* these drawings form a conspicuous feature, in many cases owing to the admirable system which exists in France of submitting to the public the plans of the proposed restorations of the old buildings which the Government, or rather the Commission of the Historic Monuments of France,—to which we have more than once had occasion to refer,—have taken under their charge.

It is difficult to speak too highly of M. Brune's reproductions of the architectural and pictorial details of the Chapel of Villeneuve-lès-Avignon, the spirited and at the same time precise rendering, the minute and loving care so noticeable in many architects' works; of the fourteenth-century paintings that adorn the walls of the chapel. All the imperfections that time has effected are so faithfully reproduced that, with these architectural drawings to refer to, the complete restoration of these interesting relics of a period when the decorative arts were in their splendour, might be effected. The great beauty of these drawings as works of the painter is owing undoubtedly to the practice so strongly recommended in Paris of the study of the human figure, a study so useful to all artists that when Edwin Landseer was examined before a Parliamentary Committee on the subject of schools of art, he amused the committee by recommending, as the best means of becoming a great painter of dogs, that the student should study closely, in the first place, the human figure.

The next drawing in interest, technical and artistic, is the large scale façade of the Ducal Palace at Venice, by M. Nenot, one of the industrious and learned pupils of the French school at Rome, which, while it strangely reminds one of the stones themselves, which have rarely before been so truly portrayed, recalls at the same moment more than one of Turner's faithful sketches, though wanting, of course, in the picturesqueness that we find in his works. M. Nenot's drawing almost irresistibly recalls the memory of an artist whose loss we have had but recently to deplore, Mr. Burges, who has left us the result of his patient studies of the stones of a portion at least, of the Ducal Palace,—the long row of capitals depicted in M. Nenot's drawing,—in the too little known "Monography," published some years ago in French.* Mr. Burges, while on a visit to Venice, had devoted his earnest attention to the exquisitely sculptured capitals of the columns which support the arcades of the palace on the Piazzetta, and on the quay,—which, it will be remembered, Mr. Ruskin has also studied in his "Stones of Venice,"—and on his way home through Paris, in the course of a visit to his friend, M. Didron, the director of the *Annales Archéologiques*, he spoke of his desire to publish the result of his studies. M. Didron had, it appeared, by a coincidence, prepared an almost similar study, but he hastened to take advantage, as he has explained in the work to which we have referred, of the more profound studies of "his young friend." By the aid of photographs from the casts of the capitals, in Mr. Ruskin's possession, which he kindly permitted to be copied, and the delicate pencil of Mr. Burges, the "Iconography of the Capitals of the Ducal Palace," written by M. Didron, is illustrated with several engravings which are characteristic specimens of Mr. Burges's power as an artist familiar with the beauties of the human figure, and the peculiar charm of the thirteenth-century work,—early fourteenth at the latest,—he loved so well, shown in the capitals of the Ducal Palace; while the letterpress compiled from Mr. Burges's notes shows in a scarcely less degree how minute and earnest a student the profession has lost in the late lamented architect.

The remarkable series of drawings of the Temple of Concord, in the Forum at Rome, by M. Blondel, presents one of those magnificent restorations that the students of the French school of the Villa Medici appear to produce with such ease; so skilfully, indeed, do they restore and represent the coloured decorations which their archæological studies justify them in believing, existed, that we would scarcely be surprised if we were told that Mr. Alma Tadema had been called in to lend his assistance; in fact, the archæological and classical knowledge that he shows in his beautiful pictures appears almost universal amongst certain French architects. Scarcely less praise is due also to M. Blondel's other exhibit, an archæologically learned restoration of a circular casino in Hadrian's Villa at Tivoli.

M. Ulmann's drawing of a wall of the Tragic Poet's House at Pompeii is positively a reproduction of the original, and we speak with a memory still fresh from having seen this faithfully copied piece of classic art. M. Ancelet's study, scarcely more than 6 in. high, of one of the sides of the familiar Mediæval ambone of the Ara Cœli, is a masterpiece, a work of love, such as the patient training of the architect can alone hope to produce. For faithful rendering of the details of the Florentine work of the Early Renaissance, M. Paulin's large drawing of the altar at Or San Michele could with difficulty be exceeded in accuracy or skill of execution.

It is to a very different period of art that belong the façades in red-brick work of a number of seventeenth-century houses at Bruges, the work of M. Hügelin, who knows the Low Countries well. These drawings, we should think, would be hailed with delight by the present horde of admirers of the now popular Flemish art were these studies exhibited in London.

The drawings that M. Vionnois exhibits of the Palais de Justice at Dijon, one of those many charming buildings which the art of the Renaissance scattered over France, are of considerable interest, particularly the details of the painted rafters in the great hall, which were discovered by the architect under a common plaster-ceiling, the artistic improvement of a century ago. Dijon has lately acquired, by the aid of whitewash,—as was related in these columns not long since,—a magnificent museum; now, by a strange co-incidence (thanks to that same humble hygienic material,—the artist's bane, and yet so often his friend),—Dijon owns another rare treasure, in the delicately-painted Renaissance ceiling of its court of justice.

M. Guerineau's large coloured studies of Japanese architecture present to us a glimpse into a world of architectural and decorative design with which, as yet, we are but little familiar. M. Thomas's large and careful study,—the drawings exhibited at the *Salon* are of dimensions which would certainly alarm our Royal Academy authorities and sadly puzzle the "hangers,"—of a window of that familiar and choice specimen of Renaissance architecture, the palace of the Cancelleria at Rome, shows us, as indeed do many of the works that hang about, the revived interest in the beautiful architecture of that prolific period, the sole misfortune of the artists of which (we have now learned to understand), was their want of acquaintance with the perfect models of Greek architecture of which their Roman models were but the debased imitations.

Were we to describe the numerous other architectural drawings exhibited this year, the space at our disposition would ill suffice; the list would name an interesting number of early architectural works, religious, civil, and military, Romanesque churches in Champagne and many another of the French provinces, châteaux Gothic and Renaissance, Mediæval donjons and fortresses, such as all admirers of the Gothic art in France for the last thirty years have studied so carefully.

* Iconographie des Chapiteaux du Palais Ducal à Venise. Par W. Burges avec Didron aîné. Paris, 1857. 4to, with three plates.

**The Manchester Society of Architects** offers prizes to be competed for by such draughtsmen as may be eligible, and by students serving their apprenticeship in the offices of architects in Manchester, or in the office of any member of the society. These include the Society Essay Prize of the value of five guineas, open to all draughtsmen or students under the age of twenty-five years; the Society Drawing Prize, of the value of five guineas, open to all students under twenty-one years of age; Mr. James P. Holden's Prize, of the value of five guineas, open to all draughtsmen and students who are under the age of twenty-five years; and Mr. Redmayne's Prize, of the value of five guineas, open to all students under the age of twenty-five years.

## THE LATE WILLIAM BURGES, A.R.A.

MR. ERNEST C. LEE, president of the Architectural Association, addressing the members assembled at the ordinary general meeting of that society on Friday, the 13th inst. (as elsewhere noticed), said:—Gentlemen,—As you are well aware, this evening's meeting of the Association was dedicated to a paper by one who is now no more. He was well known to many of us as a friend, and everybody who knew him will deeply regret his decease. I, therefore, propose reading on this occasion a few words with reference to the work of his life, which may be interesting to those younger members of the Association who did not remember him in the time when he created his greatest effects in the architectural world:—This evening, and in this place, but for his untimely decease, William Burges, the newly-elected A.R.A., would have given us all an intellectual treat in his paper on "Queen Anne Architecture." William Burges, though never a member of this Association, has endeared himself to so many of its members (for he was always a friend to young men), and was ever so ready to assist us, that I feel that no apology is needed for this departure from the usual custom, even though there were not, as in the present instance, a special reason for it. It is not my desire, nor on this occasion do I feel equal to the task, to give a descriptive account of his life and work. These have been happily touched on in the various journals, and will, I believe, on a future occasion, be brought before you in a complete form. We must all feel that a man great in the art of architecture, in its broadest sense, has gone from our midst. To those who remember the effect of his Law Court drawings on the architecture of the period the feeling comes more home; for, of late, on account of his works being mostly executed far from London, students in the metropolis have possibly conceived an idea of William Burges rather as a designer of decoration than as a great architect. These do not know the *furore* caused in the architectural world by his Law Courts design,—the revulsion against false principles that the drysalters' warehouse in Thames-street effected; they may not have heard of the Bombay Schools of Art, perhaps the most marvellous design that he ever made, compelling rigid thirteenth-century Gothic to fulfil the requirements of the torrid zone, and to harmonise with its surroundings; nor may they know the wondrous flexibility of the ultra-Goth shown in his beautiful decoration (in the Early Renaissance style) of the chapel of Worcester College, Oxford. Art in everything was his leading principle through life; and though he loved more fondly than any other the works in architecture of the Thirteenth Century, which he termed the Classic period of Mediæval art, he conscientiously studied all styles, and could manipulate them in a manner simply marvellous, even to those who knew him best. He hated a sham; he laboriously studied all materials and their treatment, sought out the actual methods, and strove to reproduce them in his works. There is, I presume, not a material used in the building or decorative arts in which he has not erected a monument to his genius. Probably no architect of the present day was more capable of erecting a really grand building. His power of grasp in the large, his grandeur of conception and completion of design in its minutest details, was, I think, unequalled. His love of completeness in the carrying out of his designs is exemplified in all his works,—notably in Cardiff Castle, and in Cork Cathedral, a now completed building in all its parts, and a monument worthy of the man. I need scarcely point to his last work, left unfinished,—his own house at Melbury-road, Holland Park, to which he most kindly admitted the Colour Decoration Class during his late and, though at that time unexpected, final illness. A word as to his literary labours, which are known to so many. Few writers on archæology are so trustworthy as William Burges, for he stated nothing but what he knew, and knew thoroughly. He arrived at a knowledge of his facts by patient personal observation of the work he described, and by reference to original sources of information, taking nothing for granted that could be ascertained by research,—his judgment in matters of the history of art and archæology being in all cases based on testimony rigorously sifted according to the strict laws of evidence. What effect his works and teachings have had on the present generation it is perhaps too soon to decide; but of this there is little doubt, that he liberated Gothic design from dry-as-dust precedent and studied copyism, and, though a reverent follower of all rational precedent, he inculcated the reproduction of the feeling of old work rather than the slavish imitation of it. One of his leading principles was that the architect should store his mind by laborious and conscientious measurements and study of the ways and means of the old men, and then go home and design from, and not to them,—that he should allow fancy, properly under control, to have something to say in the matter, and working on fixed principles of construction and design, to produce some new thing. As an illustration, I may mention that his Thirteenth-century dormer to the Law Courts was based on the Flamboyant dormers of the Cluny Museum; and this translation, as I may call it, of the architectural ideas of good artists of all periods into the language of the style in which he himself thought was a system which he often adopted, though it would, perhaps, be going too far to say it was the keystone of his method of design. Equally great in any style he took in hand, and equally finished in detail, advancing, though more slowly than others, in the requirements and desires of the age, we are, perhaps, robbed of another surprise in a new method of design by one of the most original of modern architects, which might possibly be called Burgesian Queen Anne. We cannot tell how he would have met the subject of his paper; but we may be sure that his treatment of the subject would have been thoughtful as well as vigorous; that he would have dealt out censure with unsparing hand on thoughtless detail, unconstructional and meretricious design, but would not have been unmindful of the real values of this latest development. Ever a kindly and genial friend, his loss will long be felt by all who had the pleasure of knowing him. Too tardily recognised by the Royal Academy and elected a member, vigorous and honest in criticism, jealous of the honour of his profession, of great artistic attainments, outspoken and straightforward, William Burges leaves a gap that it will not be easy to fill.

## MR. LASCELLES'S SPECIALTIES IN CONCRETE BUILDING AND DECORATION.

A LARGE number of the members of the Architectural Association visited the well-known workshops and showrooms of Mr. W. H. Lascelles, Bunhill-row, Finsbury, on the afternoon of the 14th inst. Mr. Lascelles's firm has been long known for its joinery work, but of late years, as most of our readers will know, he has paid a great deal of attention, and with very considerable success, to the employment of concrete, not only as a constructional material, but as a means of architectural embellishment.

To speak of the joinery department first. The visitors had the opportunity of seeing in action a number of ingenious wood-working machines, capable of performing almost every conceivable operation in the conversion of wood, and absolutely perfect but for the noise which seems to be a necessarily attendant condition of their working. Mr. Lascelles said that whereas formerly a very large quantity of cheap joinery was made in London and other of our large towns, the cheap joinery trade of this country had now fallen off almost to nothing, owing to the extensive importation of Swedish and Canadian joinery. He had learned, from conversations he had had with members of joinery firms belonging to Gothenburg and Ottawa, that the secret of the cheapness of the Swedish and Canadian joinery was economy of material. A great number of the doors, sashes, and mouldings that were imported were made entirely out of the stuff taken off in the process of squaring and converting the timber into deals and planks, and what was too small to be used up in that way went to provide fuel for the steam-engines that provided the power for the machinery. The home joinery trade was now, for the most part, confined exclusively to work of the best description and of special character.

Before passing on to refer to the concrete work exhibited to the visitors by Mr. Lascelles, we may say a word or two as to "Spence's Metal," a material which we have commended to the attention of architects and others on more than one occasion as being capable of effective use for decorative purposes. The material has also important and valuable industrial applications, but of these we will not now speak. Mr. Lascelles, with characteristic enterprise, has "taken up" the material, which he proposes to use for exterior architectural embellishment in conjunction with a black concrete having a smooth hard surface, and very slightly polished. The normal colour of Spence's metal is a bluish black, but it can be, we were informed, varied in colour so as to somewhat resemble bronze. Mr. Lascelles referred to the Palace of Justice, in Brussels,* as containing a great deal of decorative architectural work composed of black marble and bronze. Mr. Lascelles is of opinion that an almost equally good effect could be obtained, at a much smaller cost, by the use of Spence's metal in conjunction with black concrete; and certainly a very excellent frieze, designed by a well-known architect, and consisting of a bold running floral pattern, together with a number of other specimens of work in Spence's metal shown to the visitors, went far to support Mr. Lascelles's view. Spence's metal, it may be added, possesses the advantage of cheapness, incorrodibility, and great facility of manipulation.

Passing on to notice the productions in concrete, the visitors were struck by the almost infinite variety of applications of the useful material which Mr. Lascelles has so largely made his own. Architectural dressings of all kinds, such as reveals, string-courses, friezes, cornices, chimney-shafts, piers, pilasters, finials, copings, crestings, pediments for gables, panels, fountains, chimney-pieces, corbels, &c., are to be seen in profusion in his show-rooms. Many of the articles are moulded direct from models made by some of our best-known modellers from the designs of architects of eminence. All the work is cleanly moulded, has a good face, and may be had in several colours, the great run, however, being upon red, both for external and internal work. The visitors were shown somewhat of a novelty in the form of a concrete chambered open fireplace stove, with fire-clay back and sides, so arranged as to permit of the passage of cold external air into the concrete case or chamber, which air, after being warmed by contact with the fire-clay back and sides of the grate, passes into the room through perforated panels in the upper part of the stove, so that, besides acting as an ordinary stove for warming purposes, it assists ventilation by providing a continuous supply of warmed fresh air. This stove is a sample of several which have been made by Mr. Lascelles for the temporary offices of the Peninsular and Oriental Company in the Albert Dock. Mr. Lascelles exhibited and explained to the visitors his economical modes of building cottages and other small buildings with walls the total thickness of which was only about 6 in., made up of neat cement tiles only ¼ in. thick, fastened inside and outside to longitudinal wooden fillets about 1 in. square carried by timber uprights about 3 in. square, thus leaving an air-space of 5 in. between the inner and outer tiles of cement. The timber uprights are tenoned into a plate raised somewhat from the ground and protected from damp by a damp-course of slate or other substance bedded in cement. This plate is also lime-whited, to prevent dry-rot, for, according to Mr. Lascelles, dry-rot will not extend to timber which has been lime-whited. As a preventive of dry-rot in the uprights, Mr. Lascelles provides openings here and there from the air-spaces of his walls into the open air, so as to promote a circulation of air through the spaces, which can also be used from within as a means of ventilation. Upon the top of the uprights Mr. Lascelles lays a plate to receive the roof timbers or the joints of an upper story, as the case may be. The tiles or slabs are the same for external and for internal use, and are roughened to afford a key for the internal or external finishing material. Internally they can be finished with a thin coating of fine plaster, and the smooth surface thus obtained can be distempered or papered. Externally, the slabs can be finished with "roughcast," or any other suitable mode of decoration. These hollow-walled cottages Mr. Lascelles claims,—and no doubt justly so,—to be warmer in winter, cooler in summer, and drier all the year round, than houses having solid stone or brick walls. He called attention to a letter received from the lady superintendent of a convalescent home at Lympsfield, built on the principle here described, in which the writer said that during the past winter the "home" was the only dry building in the village. Potter's concrete slabs for buildings, made by Mr. Lascelles for the patentee, were exhibited. A coping in red-faced concrete, 13 in. by 3½ in.,

* Illustrated in *Builder*, vol. XXXIX., p. 212.

was shown as capable of being supplied at 1s 2d. per foot run, and close by was seen a concrete cresting for roofing purposes, supplied at 6d. per foot run. Some capital stopped, weathered, and throated cills in concrete were marked at 4s. per foot cube. Mr. Lascelles also makes an egg-shaped sewer, 4 ft. by 2 ft. 6 in., in four pieces of concrete, viz., invert, sides or cheeks, and arch, at 10s. per foot run. These items, and the prices attached to them, are quoted by us as fairly illustrative of what Mr. Lascelles can do in the way of architectural and constructive concrete work. Touching the strength of the material, which is being employed by Mr. Blomfield for the columns of St. John's Church, Berkeley-square, specimens of it have lately been tested by Mr. Kirkaldy, with the following results:—

*Results of Experiments to ascertain the Resistance to Thrusting Stress of Nine 2-in. Concrete Cubes, received from Mr. W. H. Lascelles.*

| Dimensions. | | Base Area. | Cracked slightly. | | | Crushed, Steelyard dropped. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| | | | Stress. | Per square inch. | Per square foot. | Stress. | Per square inch. | Per square foot. | |
| Inches. | | Square Inches. | lb. | lb. | Tons. | lb. | lb. | Tons. | |
| 2·03 | 2·00 × 2·00 | 4·00 | 19,162 | 4,790 | 308·0 | 19,162 | 4,790 | 308·0 | Neat cement, made Dec. 15th, 1880. |
| 2·03 | 2·00 × 2·00 | 4·00 | 18,628 | 4,657 | 299·4 | 18,628 | 4,657 | 299·4 | Ditto. |
| 2·00 | 2·00 × 2·00 | 4·00 | 16,298 | 4,074 | 261·9 | 16,298 | 4,074 | 261·9 | Neat cement, made March 8th, 1881. |
| 2·00 | 2·00 × 2·00 | 4·00 | 12,982 | 3,245 | 208·6 | 12,982 | 3,245 | 208·6 | Three of cement to ten of ground material, made Jan. 18th, 1881. |
| 2·00 | 2·00 × 2·00 | 4·00 | 12,248 | 3,062 | 196·9 | 12,248 | 3,062 | 196·9 | Ditto. |
| 2·00 | 2·00 × 2·00 | 4·00 | 8,488 | 2,122 | 136·4 | 8,488 | 2,122 | 136·4 | One of cement to four of ground material, made Jan. 1st, 1880. |
| 2·00 | 2·00 × 2·00 | 4·00 | 8,023 | 2,006 | 129·0 | 8,023 | 2,006 | 129·0 | Ditto. |
| 2·00 | 2·00 × 2·00 | 4·00 | 5,838 | 1,459 | 93·8 | 5,838 | 1,459 | 93·8 | One of cement to four of ground material, made Jan. 1st, 1881. |
| 2·00 | 2·00 × 2·00 | 4·00 | 5,796 | 1,449 | 93·1 | 5,796 | 1,449 | 93·1 | Ditto. |

Bedded between pieces of pine ⅛-inch thick.

DAVID KIRKALDY.

## ANCIENT LIGHTS.

ARCHITECTURAL ASSOCIATION.

AT the ordinary general meeting of this Association, held on Friday, the 13th inst., Mr. Ernest C. Lee, president, in the chair, the following gentlemen were elected members, viz, Messrs. A. M. H. Oliver, A. H. Acton, A. M. Calderon, E. S. Gale, A. Pictor, Reginald White, A. E. Calton, D. Waterhouse, and H. G. Papps. Fourteen or fifteen other gentlemen were nominated for membership.

On the motion of Mr. Eales, a vote of thanks was given to Mr. W. H. Lascelles, of Bunhill-row, for permitting the members of the Association to visit his works on Saturday, the 7th inst.,* and it was announced that this Saturday, the 21st, a visit would be paid, by the kind permission of Mr. Horace Jones, the City Architect, to the new Fruit and Vegetable Market in Farringdon-road. On the motion of Mr. Page, a vote of thanks was given to the entertainments sub-committee for their services in connexion with the members' *soirée* on the 29th ult.

Professor Kerr presented several volumes of his own works to the library of the Association, and Mr. Hampden W. Pratt, the librarian, announced some other donations. On the motion of the Chairman a vote of thanks was given to the donors.

The Chairman having made some observations on the life and works of the late William Burges, A.R.A. (who was to have read a paper on this occasion on "Queen Anne Architecture"), which observations we print in another column,

Mr. R. E. Pownall read the following paper on "Light and Air,"—

Though the terms "Light and Air" are used in conjunction, the cases in which "air" is really brought into question are very few; in fact, the law appertaining to them rests rather upon a different footing than as to light. I doubt, with the short time at my disposal, whether I shall be able to refer to the distinction in more than very general terms. The title of my paper, therefore, would preferably be "Ancient Lights," as that will be its more prominent subject.

So accustomed have we become in these later years to such cases, that I almost doubt whether many in the profession have ever endeavoured to carry their minds back to the period when the first case of light and air arose, and to imagine what could have been the arguments used on the part of those seeking to establish the right to what we now term "Ancient Lights," and which could have ensured them success in so doing.

That such a period must have existed will be patent to all; in fact, it is within comparatively recent years that this startling innovation has existed upon the solid basis in which it now rests.

In those early times, if a man endeavoured to establish his rights to what is termed the easement of lights or air over another's land, it was incumbent upon him to prove that it had been enjoyed from time immemorial, or to the full extent of legal memory. If he proved this he was granted the further presumption that his predecessors had in the first instance enjoyed the privilege by right of some special grants the absolute evidence or existence of which was not then forthcoming,—precisely as, in the same way, if a family had been possessed of estates for a like period, but the deeds by which they obtained them in the first instance were not forthcoming, a man would have been confirmed in his possession as being rightly so.

Since those good old times, the tendency of the Legislature has been gradually to shorten the period by which to acquire a right to real estate through adverse possession, and in the absence of any fraud the time is now limited to twelve years, this being made so in the interest of purchasers for full consideration or value.

Rights of light have not always followed the laws regulating real estate. In early times, after a precedent had once been established, the trouble of going back against "the memory of man" was eventually considered too great; and Mr. Banister Fletcher states in his book that this time was ultimately settled to begin with the reign of Richard I. As time went on, this remedy became worse than the trouble it was intended to obviate; and in the reign of Elizabeth some sort of general understanding appears to have been come to by the judges not to grant the right with thirty or forty years' enjoyment, "for it was the owner's folly to build his house so near the other's land."

In 1623 the Statute of Limitations was passed, which limited the period of recovery from adverse possession by ejectment to twenty years, and this was held to cover the case of lights or other easements to the house as well as the house, although no special mention of them was made in the Act. During all this period, however, the times given did not in themselves confer the right; it was only, as I have said, admitted as evidence of a presumptive grant. It was, however, quite open for the defendant or plaintiff, as the case might be, to go farther back beyond the twenty, or whatever number of years it might be, and prove the prior state.

It was by an extension of this principle that in 1832 the Prescription Act was passed, doing away at one blow with all customs to the contrary, and also with the legal fiction that the right was enjoyed by grant in the first instance. It is upon the following special clauses of that Act that nearly all cases of ancient lights since that period have depended.

The statute is 2nd and 3rd of William IV., cap. 71. It does not extend to Scotland or Ireland.

Clauses 3 and 4 run as follows:—

When the access and use of light to and for any dwelling-house, workshop, or other building, shall have been actually enjoyed therewith for the full period of twenty years without interruption, the right thereto shall be deemed absolute and indefeasible, any local usage or custom to the contrary notwithstanding, unless it shall appear that the same was enjoyed by some consent or agreement expressly made or given for that purpose by deed or writing.

Each of the respective periods of years herein before mentioned shall be deemed and taken to be the period next before some suit or action wherein the claim or matter to which such period may relate shall have been, or shall be brought into question, and no act or other matter shall be deemed to be an interruption, within the meaning of the statute, unless the same shall have been or shall be submitted to or acquiesced in for one year after the party interrupted shall have had or shall have notice thereof, and of the person making or authorising the same to be made.

Previously to the time of the Prescription Act, there had been a custom in the City of London that a man might build to any height on his old foundations, although he obstructed his neighbour's lights. This custom was, however, abolished by the Prescription Act (Salters' Company *v.* Jay).

With this slight amount of very condensed history of the subject by way of preface, we will, if you please, return to consideration of the abstract question.

A man having possession of a piece of land has the control thereof from as deep as he can go in the earth to as high as he can go towards the sky, so long as he does no injury to his fellows. Therefore, the owner of each individual plot should in building obtain all the light or air he requires for the purposes of his building from the space above his own land, and from that only, with this important addition,—that he, in common with others, also has the right over the portion which he or others in his behalf have devoted to public or semi-public purposes for the sake of common convenience in access to the several properties.

This one point being established, it is evident that if in building he so places his erection on his plot that he leaves not space enough for all the light and air he requires for his purposes, to be obtained from his own land or across the highway, he is taking, and intentionally taking, more than he is entitled to; for in building within his strict rights he should build only in the way he would do if his land were surrounded entirely by an impenetrable division, such as a wall reaching from the centre of the earth to the sky. If, however, from carelessness or from *malice prepense*, he so places his windows that for due efficiency they must receive light over his neighbour's land, he is of necessity bound to take the consequences. The neighbour has no power to compel him to close them, neither has he any title to invade his rights by entering upon his land to himself close them. His only remedy, therefore, is so to use his own land that he may not be deemed to have consented to the user of his own ground which his neighbour intended. In the majority of cases, the most convenient form of user for this purpose is the erection of some sort of hoard which shall be coincident with the boundary of his own land, and be of sufficient height to effectually prevent his neighbour from obtaining light other than from his own property. Of this I shall have more to say hereafter.

Occasionally a consent for the user of light over a neighbour's property is asked for and granted. This is more especially the case when there is no immediate prospect of the adjacent land coming soon into occupation. There is, however, always an element of danger in granting any such consent, even upon payment of an annual rent, as there may be difficulty in withdrawing the grant in the event of your requiring to use the land, so long as the tenant pays the stipulated rent, which, if it answers his purpose, he will be sure to do.

If not enjoyed by grant it is evident then in

* Some account of what they saw there is given in a previous column.

the abstract that the light is filched from the neighbour, just as much as a pickpocket filches whatever he may acquire in that way. You may say that by the exercise of ordinary vigilance, and the exercise of his own rights, the servient owner (or one over whose ground the easement is sought to be acquired by the dominant owner), may prevent the acquisition of any such privilege. True, so may any person prevent his pocket being picked, but, supposing the action to be accomplished, the law makes this extraordinary distinction,—if the pickpocket is caught in the act, he is punished for the attempt. The dominant owner caught in the act goes free, and, if the servient owner does not incur considerable expense to prevent him, ultimately is allowed to keep that which he filched in the first instance. The pickpocket, on the contrary, if he succeeds in acquiring complete possession of the article he filches, and is caught, commits a greater crime than the mere attempt, and is far more severely punished accordingly, while the dominant owner, if he succeeds in acquiring complete possession, is allowed to retain it as a reward for his acuteness.

I would, therefore, urge that the whole system of the question of "ancient lights," in addition to its other inconveniences, of which more presently, holds out a direct premium for dishonesty. It is like enacting that, if you go to sleep, and a thief puts his hand into your pocket, if you do not wake for twenty minutes after, he is legally entitled to keep all he has succeeded in abstracting.

To return to the extract from the Prescription Act I just read, and the former part of which, for clearness sake, I will repeat:—

"When the access and use of light to and for any building shall have been actually enjoyed therewith for the full period of twenty years without interruption, the right thereto shall be deemed absolute and indefeasible, any local usage or custom to the contrary notwithstanding, unless it shall appear that the same was enjoyed by some consent or agreement expressly made for that purpose by writing."

This would appear to be clear enough to meet all possible cases requiring only the proof of the twenty years to ensure the right to the light. Judge-made law, however, has made considerable variation in this, and I will here recount the effect of a few of the leading decisions. The first I shall mention goes to the root of the whole matter by inserting a qualification in the Act which, to a non-legal mind, seems unwarrantable, and is the cause of the greater number of the cases that arise, although, no doubt, it greatly mitigates the hardship every case involves. The qualification is, that to sustain the right, the premises must be proved to suffer "substantial damage" (Martin *v.* Headon, 4th May, 1866, *re* Conduit-place, Paddington, V. C. Kindersley; Curriers' Company *v.* Corbett, L. J. Turner; Clarke *v.* Clarke, Nov., 1865).

In Yates *v.* Jack, however (1866), the original law would seem to have been maintained; while in Jackson *v.* Duke of Newcastle, as to premises in Cockspur-street, it was, on appeal, decided that the owner of the dominant tenement must be content to receive money compensation for injury not of very great extent.

And in Rand *v.* Cook, Chief Baron Pollock said,—"It is not the law that a man who has enjoyed a certain amount of light should go on enjoying that amount for ever. Society is so constituted that there must be give and take always going on. Some people, no doubt, wished to make it all take and no give," which latter remark surely will bear an interpretation different to that he evidently intended. He who takes without asking at first, and objects when his neighbour wants his own, surely affords a case of all take and no give. The opening remarks of the judge seem diametrically opposed to the wording of the Prescription Act under which the action was brought, and which says, in effect, that "where the light has been enjoyed twenty years the right shall be deemed absolute and indefeasible."

Another extension of the same principle is, that, when a building is partially erected before an action is brought, the Court will not order it to be pulled down unless in a very extreme case, but will order an inquiry to assess a sum for damage to be payable by the owner of the servient to that of the dominant tenement (Isenberg *v.* East India House Estate Company, Dec. 19, 1863). It is held, too, in Lawrence *v.* Austin, 1865, by the Master of the Rolls, that if a building is completed before a bill is filed, the Court of Chancery will not interfere, but will leave the plaintiff to his remedy in an action for damages.

Having now rapidly ran through the matter in its pseudo-legal aspect, I will turn more particularly to the manner in which it affects members of our profession. This is principally in connexion with identity or otherwise of existing lights or buildings with some that have gone before, and in connexion with the sufficiency of any given light for the present or past purpose for which it is used; and, finally, with the effect that any proposed erection will have in the matter of light with certain other existing premises. With regard to this, I would say that, previously to a small treatise published by our friend Professor Kerr, there seems to have been no sort of system with the least pretension to accuracy. And any evidence given upon the subject was merely the dogmatic expression of an opinion,—an opinion which the application of such a system as he then introduced, would in many cases have proved to be in a great degree erroneous.

I am glad to see Professor Kerr is present, because from his position and experience in these matters he is in a position to afford us very valuable information. He will, however, I trust, pardon me for very shortly describing his system, leaving him to amplify it in points he considers necessary. Professor Kerr starts by the proposition that light is received equally from every point in the whole hemisphere of the heavens. A skylight in an unrestricted position receives light from the whole hemisphere, the vertical section of which is a hemisphere in all directions through the centre of the plan, which is a circle. A window in a vertical surface will receive light from half a hemisphere, which will be a semicircle in plan and a quadrant in elevation. You may perhaps say, Why a quadrant in elevation? For this reason, that no matter how high the base of our window may be, that for all purposes represents the horizon; and any light received from below that line is not direct light, but more or less of the nature of reflected light, of which more hereafter. A word only is necessary as showing the influence which the thickness of the wall and nature of the opening exerts upon the quantity of light admitted to the apartment. In this connexion the advantage of splayed jambs is shown as admitting direct light nearer to the darker corners of the room.

Mr. Kerr divides the half hemisphere into what may be termed spherical squares by meridian and parallels, similar to the ordinary degrees of latitude and longitude on geographical globes. To each of these squares he assigns a numerical value dependent on its position. If for any particular purpose the light is more valuable from any particular quarter (say, from north or north-east for a studie), the slight correction can be made.

The Professor's next step is to ascertain the proportion of this total number of measures which is on an average required for the sufficient lighting of a room as a standard. I cannot now go through the steps by which he arrives at the result,—they are based upon observations on ordinary London rooms,—but will simply give the figures, viz,—that with 1 ft. of window width to 50 ft. of floor, at 68 measures (all above 45°).

This 45°, I should mention, is a rough approximation at the obscuration that in a town one should consider himself bound to suffer. It has no other value. Its status is perhaps justified by the Metropolitan Local Management Act, 1862, which states that no building except church or chapel should be erected of a height greater than the width of the street without the sanction of the Board of Works. There was also in 1856 a by-law stating that streets should be 40 ft. wide, and the houses not to exceed 40 ft. high to eaves; if higher, street must be of width equal to height. At the back of houses the Building Act is satisfied by 100 ft. super. anyhow and anywhere. The model by-laws of the Local Government Board go a little further.

For simplicity's sake, let us assume the model [exhibited] to be applied to the centre of the bottom of the window to be dealt with: thus it is obvious the trace of existing buildings can readily be projected on the surface, the portion above showing the amount of sky-surface from which direct light is received; if the trace of proposed buildings is now projected in the half hemisphere, the difference between the two lines gives the amount of sky-surface which is obscured thereby. Assigning values to their respective segments according to the tabular values Professor Kerr has mathematically obtained, we are enabled at once to compute the results, and shape our opinion accordingly.

You will notice nothing has been taken into account here for the effect of reflected light, though you will readily see that in most cases it plays a very important part in the lighting of our rooms,—more especially is this the case when a near obstruction excludes all, or nearly all, the direct rays from sky surface.

I may perhaps here be permitted to make a digression, just to mention that in such cases where an ordinary reflector cannot be placed, by reason of the intervening space being in another occupation, or having skylights beneath, considerable benefit may be derived by removing the window (if set some inches within the wall, where not a ray of light can fall upon it) and substituting another placed flush with the outside, the glass being roughly ground on the outside. The light from the whole of the visible sky, and from the remotest parts of the opposite wall will be introduced into the apartment, reflected from the innumerable faces or facets which the rough grinding of the glass has produced. In aid of this method of distributing light, the opposite side should be kept whitewashed, and for the same reason the ceilings and walls of the apartment should be as white as possible. Even a blind of fine white muslin placed on the outside of a window flush with the wall effects the same result."

To return to reflected light as affecting an apartment, the great reason that it is so little taken account of in cases of ancient lights is that so much depends upon the colour and maintenance of the reflecting surface, and if this is in occupation by the servient owner, there is no continuous obligation upon him to keep it as it is; and if in occupation by the dominant owner, it is an additional burden upon his damage to further restrict his use of his own that his neighbour may benefit.

Another effect of reflection which I should mention is that occasioned by the glazing of the windows. It has been found by experiment that when light is incident at an angle of 85°, measured from the perpendicular to the glass, 543 rays out of every 1,000 are reflected. When the angle of incidence is 75°, 299 out of every 1,000 are reflected. The better the glass, that is to say the more polished the surface, the better the reflection.

Having now spoken of the knowledge to be acquired, it only remains for me to say how it is to be employed.

In dealing with existing buildings where right of light can by any possibility come into question, the most politic course is to make complete and accurately-measured and figured drawings of the whole premises, this irrespective of whether you are engaged on behalf of either the servient or the dominant tenement. The next step is to get these examined and attested as correct by some other professional man (in London say the district surveyor), who has no interest in the matter. You are then enabled to rely upon these as showing position of matters before anything was disturbed. Above all, fully explain to the client the difficulties and possibilities of the situation; face them at first, and you will avoid the mortification of an incomplete building standing mutilated and truncated as a melancholy exhibition of the power of "ancient lights."

When buildings having ancient lights, or obscuring windows, are pulled down, unless the re-erection is to be immediate, it is often policy to form a skeleton scaffold showing roughly the position and size of the old. An instance of this occurs in Farringdon-street, on the left hand side, about half-way from Holborn Viaduct towards Ludgate-hill. Abandonment for a time will not lose the right, but it must clearly be shown that the non-use was not by reason of any action on the part of the servient owner (Tapling *v.* Jones).

Lawyers will not listen to mathematical calculations, scarcely will they look at diagrams. "Give us," they say, "something a court and, if necessary, a jury, can readily follow and understand; that is all we want. Tell us what you know, and if you can readily show how you get the knowledge, so much the better. Make as many drawings and calculations as you please for your own guidance and information, but do not bring them into court. Give us results."

The effect of an obstruction to old lights has

in later years been obtained by raising a tarpaulin of the shape of proposed works to the place they will occupy, and then dropping it without the knowledge of the observer, who, with his back to the window, notes the result in the room supposed to be affected.

I have now laid the subject before you in brief and general terms, and you can judge for yourselves in some small measure the pitfalls with which it abounds. But why should it? I can scarcely conceive how, in its present phase, it can do anything else, based as it now is upon wilful wrong, in the first instance, and giving that wrong the benefit of legal support.

Where would be the difficulty or the wrong in making it necessary that each man in building should depend for light on his own land alone, unless he could obtain a grant from his neighbour? There would be a little trouble attending the change in the first instance, perhaps a little injustice,—there always is when any reform is introduced; the rights of the few give way to the benefit of the many. The first step would be the repeal of the clauses in the Prescription Act, which I quoted. The next would be an enactment for the protection of those who, at the time of the new enactment, had been in possession of their lights for the present statutory period of twenty years. And to secure equal justice, this should also extend to those who had been in possession for over nineteen years, inasmuch as it is impossible for the servient owner now to interrupt it for a whole year (as is required by clause 4) before the statutory period of twenty years shall have expired. By defeating the acquirement of the right in all cases which have not existed for these nineteen years, no wrong will be done, as no right has been acquired, and it is quite competent for the servient owner at the present time to prevent it. Some little time should be given after the passing of the Act before it should come into operation, as was done in the case of the Property Limitation Act, 1874, so that parties may have time to appreciate their position. To diminish future litigation, the Act might contain provisions for the granting of an indefeasible title by deed in all cases that were proved to the satisfaction of some presiding authority to have been in existence for the twenty years before the passing of the Act.

Of course, this is only a crude idea, and I bring it forward for the express purpose of eliciting discussion upon it, more especially as a committee of the Royal Institute of British Architects is now considering the whole question. From what one could gather at the discussion of Mr. Roger Smith's paper, few are prepared at the present time to go to the extent I propose. I am aware of many objections, and will endeavour to meet such of the more pertinent as may be raised during the discussion, but I think the balance of good will be found to be in favour of the change.

The arguments Mr. Smith used would support my case equally well as his. There is, however, this difference in our propositions. He says, in effect:—"Let every man build as he pleases, notwithstanding he interferes with ancient lights, provided he gives due notice and pays compensation."

I say, "Settle now, once for all, the position of the parties, and then let each do as he likes on his own." In no way do I propose to interfere with any man's existing rights.

I cannot say I agree with all the arguments Mr. Smith uses to support his case. As he is not here, perhaps it is unfair to trouble you with them. He first recites that restrictions of lighting are injurious to architecture. This I cannot agree with, for architecture should be suited to the place, not the place subordinate to the architecture. Many of our most picturesque and architectural edifices owe a great proportion of their beauty to the manner in which the architect has overcome the difficulties of the situation. Such an argument reminds me of the story of the man who wanted a new pair of boots. He entered the shop, tried pair after pair without finding any to suit. At last the wearied shopkeeper ventured to suggest that he thought if the gentleman were to cut his corns he would be more readily fitted. The reply was withering: "Hang it all, sir, I want a pair of boots to fit my feet; and do you think I am going to plane down my feet to fit your plaguy boots? No! hang it all, sir! No!"

The case where premises are built upon land originally in the possession of one owner and afterwards divided, with lights in every direction, can, I conceive, readily be met by a particular and absolute grant in the transfer. At the present time, such a case almost invariably leads to litigation (Wheeldon *v.* Burrows), and often ends in a man not being able to keep absolutely what he paid for.

In cases where, say, a large number of houses were built upon land, and originally the property of one owner, it is, of course, easy to presume that he intended each should have the lights over the neighbour as he planned them. In the case of transfer, then, it was as easy to transfer the lights he gave as it was to transfer the property, and the deed conveying the grant was as little likely to be lost as that conveying the property; in fact, both could be in one.

The present law causes particular hardships in the case of the numerous freehold land societies. Several of these laid out and sold their estates some twenty or thirty years ago. Some of the purchasers built on their plots almost as they pleased, but certainly not in the way intended by the society in the first instance. Other purchasers have made no use of their plots to this day, and now they find in some cases that they can make little or no profitable use of them by reason of lights which have been acquired by those astute individuals who built in the beginning. It is useless telling such people that they could have prevented the acquisition by a hoarding; they thought a man's own was his own, and not his neighbour's.

Of the discussion which followed the reading of the paper, and in which Professor Kerr, Mr. William White, Mr. T. H. Watson, and Mr. J. Douglass Mathews took part, we defer a report until next week.

## SANITARY PLUMBING.

THE first of a course of six practical lectures, specially addressed to working plumbers, and illustrated by examples, diagrams, and working models and demonstrations, on "The Science and Art of Sanitary Plumbing," was delivered on Tuesday evening last in the Hall of the Society of Arts, John-street, Adelphi (under the auspices of the National Health Society), by Mr. S. Stevens Hellyer, author of "The Plumber and Sanitary Houses." The hall was greatly overcrowded, and the audience overflowed into the ante-rooms and even on to the staircase, so that many who attended were unable to hear the lecture.

Mr. Ernest Turner, who presided, said that it was with very much pleasure that he occupied the chair that evening, and saw so many plumbers present. The large attendance was an evidence of the desire which plumbers had to obtain a thorough knowledge of their trade and to do their work well. Some time since it struck him that,—having regard to the advance that was being made in sanitary science, and to the discoveries made by medical men that many serious forms of illness were due to the admission of sewer-air and noxious gases into dwelling-houses through drains, waste-pipes, and other appliances improperly planned and constructed,—it would be of great service to the public and to the plumbing trade if the members of the latter were to be afforded free opportunities of becoming acquainted with the leading principles which should guide them in planning and executing their work, and that those who availed themselves of such opportunities and proved their skill in their trade should receive some acknowledgment which should always be of service to them. Upon communicating his ideas to the National Health Society, the committee not only approved of his scheme, but set to work to consider how best it could be carried out, and they had been fortunate in securing the services, as lecturer, of Mr. Stevens Hellyer, a gentleman who was not only theoretically, but practically, acquainted with all branches of the plumbing trade. At the conclusion of the course of lectures, an examination would be held. It was proposed that the examination should be conducted by a committee of practical plumbers, and Mr. George Shaw, the late Master of the Plumbers' Company, had kindly consented to act as chairman of the committee. The following prizes would be offered to those who most distinguished themselves in the examination, viz.:—The Duke of Westminster's prize of 5*l.*; the National Health Society's prize of 5*l.*; the Society of Arts' medal; a silver medal given by himself; and several bronze medals; while certificates of proficiency would be awarded to all working plumbers who showed their competency.

Mr. Stevens Hellyer, after some prefatory remarks, observed that his lectures would be addressed to practical plumbers. When asked by the chairman of the National Health Society, Mr. Ernest Hart, to undertake the course, the doubt crossed his mind whether they would be able to get an audience of plumbers, for plumbers, as a class, were very independent, and very difficult to move. Perhaps, having so much to do with lead, they became heavy. If it was difficult to get a joke into a Scotchman's head, it was even more difficult to get a theory into the heads of some plumbers. For many years he had made a special study of plumbing work, and had endeavoured, as the joint employer of the largest number of working plumbers employed by any one firm in England, to make theory square with practice, and in these lectures he should endeavour to show how that could be done. Although he addressed his remarks chiefly to the working plumber,—the hand-worker, as he called him,—he should not be unmindful of the small master plumber who was both master and man. Judging from the so-called principles on which some plumbers of the present day worked, they seemed to be guided by positions taken up by their grandfathers a century ago. For instance, in spite of all that had been said and written on the need for, and the method of executing, proper sanitary plumbing, such things as waste-pipes taken direct from sinks, baths, and lavatories into soil-pipes without disconnexion; pan-closets with D-traps under them; and overflow-pipes from cisterns led direct into soil-pipes or D-traps, were some of the many serious and dangerous mistakes continually being perpetrated by plumbers in the plumbing-work of new houses,—even in many of those, he was sorry to say, erected from the plans and under the supervision of architects. Sanitarians were no doubt very hard upon plumbers, and very rightly so if the latter continued to perpetrate old and bad methods of doing their work. "Men of light and leading" were advancing along the new sanitary way, and yet the old-fashioned plumber would not advance to meet them, but stood entrenched among his D-traps, pan-closets, and unventilated soil-pipes. It might be said that the light of the sanitarians was only artificial or second-hand light, and that it flickered a great deal. He (the lecturer) admitted that in many cases it was only borrowed light, and that there was not much heat in it; but, inasmuch as the cry was always for "more light," light should always be welcomed, even though it was but that of a rushlight. Men should never extinguish a light, but try to distinguish themselves in it. Some men were like cistern-heads,—they held nothing; others were like solder-pots,—soon filled, and when they were filled no more could be put into them; but, fortunately for the world's progress, other men were like store cisterns, ever ready to supply the thirsty traveller with a cup of water fresh from a never-failing spring. It was not so much what a man did that made his life grand, as *how* he did it. A man might be only a poor working plumber, but if he did his work well and to the best of his powers in every way, he had lived to some advantage, even though he might descend to the grave,

"Unwept, unhonour'd, and unsung."

The British workman was not in general favour with the British public, and the plumber was by no means an exception, for everybody had a fling at him. But there were plumbers *and* plumbers, and as it would be unfair to judge of the medical profession by quacks, so it would be equally unfair to judge of plumbers by tinkers. The men who wrote on their signboards "Plumber, Painter, Glazier, Decorator, Gasfitter, Bell-hanger, Coppersmith, and Tinplate-worker" were not likely to be skilled plumbers, but were very likely to be Jacks of all trades and masters of none. Such sign-boards were sometimes seen bearing the additional words of "Builder," "Hot-water Engineer," and "Undertaker." Some of the proprietors of such boards went even further, and called themselves "Sanitary Engineers," and, as a proof of their right to the title, called in an engraver to depict upon their business cards such antiquated and unsatisfactory appliances as pan-closets and D-traps. Such cards as the following (which was a copy of one in the lecturer's possession, except, of course, that the name and address were omitted), were too often seen, as was this one, embellished with appliances which were now strongly con-

demned by all who had given the subject of the theory and practice of sanitary plumbing anything like adequate attention,—

"X. Y. Z.
Builder, Plumber, Painter,
Glazier, Carpenter,
Range and Stove Maker,
Hot-Water Engineer,
and
Sanitary Engineer.

*Water-closets Fixed* on the Newest Principles.

Writing, Graining, and Marbling.
*Fountains Erected.*"

It was absurd to suppose that any one man could be a thorough master of all the trades enumerated on that card. He knew that in some localities it was necessary that a man should be a "three-branch hand" (*i. e.* a plumber, painter, and glazier), in order to get a living; but he (the lecturer) held that no man should be allowed to call himself a plumber unless thoroughly competent; and he insisted that no plumber should be allowed to carry out sanitary plumbing without a certificate of competency. Nor should any man be allowed to put upon his card or signboard "Sanitary Engineer" without having first shown his right to the title. There was no trade a proper knowledge and practice of which were so important to the health of the community as that of the plumber. Mr. Hellyer went on to advocate the establishment of a technical school for plumbers, open to both apprentices and journeymen, where they might learn a theoretical knowledge of plumbing, and of sanitary plumbing in particular, and where they might perfect themselves in the practical knowledge of their craft. Such an institution should be endowed with funds from which to offer prizes. If such a technical school were to be formed, he would do what he could to help it. He believed that the City guild known as the Plumbers' Company was at last going to stir itself up to make some effort to improve the technical education of the men following the craft with which it was identified in name. Referring to the trade societies or unions of the plumbers, Mr. Hellyer complained that they did little or nothing to advance the spread of technical knowledge of the craft among their members, and stated it as his experience that the best workmen in the trade were the non-society men. [This statement provoked a considerable amount of hissing from a portion of the audience, but the hisses were more than half drowned by the applause of the rest of the meeting.] After urging upon working plumbers to rely upon themselves more than upon any aid that could be given them by city guilds or technical schools, the lecturer proceeded to notice some of the causes which had retarded and were retarding the progress of improvement in the plumber's art. Among these he instanced,—first, the fact that plumbers' work was for the most part out of sight, and that even when done well it was seldom appreciated like the work of tradesmen which was exposed to view. Another great reason why plumbing work was too often not what it should be was that plumbers had so often to work to the specifications of architects who knew little or nothing of plumbing, and the body of whose specifications was made to do duty for a long time and for all sorts of houses. Another cause for the slow progress made was that many of the small jobbing builders were by trade carpenters or masons, and paid little attention to their plumbing work, which was often done by men who had no right to the name of plumber. A fourth reason for defective plumbing work was that many young men apprenticed to the trade had no opportunity of learning it in many "three-branch" shops, where painting and glazing were the staple trades. In conclusion, the lecturer referred to the interest which had of late years been manifested on the subject, and after mentioning the discussions on sanitary matters which had lately taken place at the Royal Institute of British Architects, observed that if architects as a body would take up this subject and insist upon really sanitary plumbing work in all their buildings, a marked advance would soon be made in the progress of the plumber's art and in the health of the community at large.

The avidity with which the offer in our columns of tickets to admit to this course was taken up may be judged of from the fact that the whole of the tickets sent to us, more than 150, have been applied for and distributed. Some of the letters received did great credit to the writers and showed that they had not been readers of the *Builder* for nothing.

We may add, that as a large number of persons were unable to obtain admission to this lecture, and as it is anticipated that succeeding lectures will be equally crowded, the National Health Society is endeavouring to arrange for a repetition of the lectures.

The next lecture will be given on Wednesday, June 1, when Mr. Hellyer will treat of "Joints and Pipe-bending."

## THE NEW CATHEDRAL AT TRURO.

A meeting was held at Truro on the 10th instant, at which the Bishop presided. Mr. Pearson, R.A., was present, and read his report as to the respective merits of the most desirable stones to be used in the erection of the new building. The result of the information he had obtained had, he regretted to say, satisfied him that there were no stones in Cornwall or near it that could, with the means at his command, be used either externally or for decorative purposes. The first reason for this was on account of their hardness, and secondly, because, except in the case of granite, no large blocks could be obtained, and even those blocks that could be procured could not be depended upon, in consequence of the rents which ran in every direction through them, and which, after many days of labour, might cause the stone to separate and become useless in the hands of the mason. The stones also came out of the quarries in very irregular shapes, and much labour would be lost in reducing the ungainly masses. The elvans generally spoken of were wild-duck, Pentewan, and Newham. Wild-duck was a good-looking stone; but there was no likelihood of getting it in large blocks or sufficient quantities, and the same objections applied in an even greater degree to Pentewan stone. Newham was a particularly nice stone, but the quarries appeared to be nearly worked out. Seveock stone had also been suggested; but this was difficult to obtain in large quantities, and was hard and unyielding, and covered with black spots. Mabe granite was well adapted for engineering work or in works where plain square blocks were required; but even in such plain works the cost was from two to three times that of the Doulting stone. The St. Stephen's granite was a soft stone, and liable to decay, and therefore unsuitable for the cathedral. Mr. Pearson having stated at length these objections to local stones, went on to describe the various other stones used for such works, dwelling particularly on the Bath stone. There were various sorts of Bath stone, and great care should be exercised in selecting the best that could be obtained. Providing this were done, the stone was well adapted for resisting the disintegrating agencies of the weather, was not costly, and was easily worked. Having carefully gone into the cost of the various stones he made the following estimates:—Bath stone, inside and outside, 34,856*l.*; Bath stone outside and Doulting stone inside, 35,350*l.*; Doulting stone inside and outside, 36,350*l.*; Hamhill outside and Bath stone inside, 37,587*l.*; Hamhill outside and inside, 39,587*l.*; Wild-duck, outside (assuming it could be got), and Bath stone inside, 41,306*l.*; Wild-duck outside and inside, 49,605*l.*; Pentewan stone about the same cost as Wild-duck, if it could be procured; Newham outside and Bath inside, 41,456*l.*; Newham outside and inside, 49,948*l.*; St. Stephen's granite outside and Bath stone inside, 42,656*l.*; St. Stephen's granite outside and inside, 52,732*l.*; if St. Mabe granite were used, and assuming it to be only as hard again as St. Stephen's, 20,000*l.* would have to be added to the cost of St. Stephen's stone.

It was decided to let the final selection of the stone to be used stand over for a fortnight. A strong feeling existed in some present that the retention of the ancient south-east façade of the old church and its incorporation into the new cathedral was not essentially necessary, nor, indeed, in any way desirable. Mr. Pearson, however, pleaded hard for its preservation. The general works to the foundations, &c., are actively progressing, under the care of Mr. James Bubb, the managing clerk of works, and Mr. Dan. Delafield, his foreman.

A Truro woman and her child fell into the river a few days ago. Mr. Bubb and a mason in his employ on the cathedral, named Budge, were instrumental in saving their lives. They have been publicly thanked for their gallant conduct.

## RHINE BRIDGE, AT MAYENCE.

The Government of Hesse having determined that a permanent bridge should be built over the Rhine, to connect Mayence with Castel, designs were invited to be sent in for the execution of this project. The first premium was 8,000 marks, and an additional sum of 8,000 marks to be divided between the next two best designs. The estimate of the cost of the bridge is 3,600,000 marks, or 180,000*l.* The number of designs sent in was thirty-eight, and, for the past fortnight, these have been on view in Mayence. The first premium is taken by the design sent in by Messrs. Lauter, Bifinger, & Thiersch. It has been decided to commence the construction of the bridge this summer, and the execution of it has been entrusted to the gentlemen just named. The judges remark that the plans and drawings of the firm in question are executed in such a manner that the work of building the bridge can be commenced at once, and carried out by their sole help without any additional detailed designs.

## ARCHITECTS AND THE SYDNEY EXHIBITION.

A certificate and a large bronze medal have been presented by the Sydney International Exhibition for "Architectural Designs,—highly commended" to Mr. Chas. Forster Hayward, F.S.A., architect.

The Commissioners have given a first award for "first degree of merit," with two diplomas and medal, to Mr. John P. Seddon, architect, for his four architectural drawings sent to the Sydney Exhibition. One of the diplomas was specially for his drawing of the "Interior of the Chapel of St. Peter's Orphanage, Isle of Thanet," built for the Archbishop of Canterbury and Mrs. Tait.

The Commissioners have given a "third award" "based upon inherent and comparative merit," with their diploma and medal, to Mr. Thomas Goodman, architect, for his picture of the ancient porch of the parish church of South Benfleet.

Mr. I'Anson and others have also received medals, but no complete list has reached us.

## THE BRICK AND TILE WORKS AT PLUCKLEY.

The Tylers and Bricklayers' Company (incorporated by Queen Elizabeth in 1568) have visited the works of the Kent Brick and Tile Company, at Pluckley, near Ashford, Kent, at the invitation of Mr. Edwin Hughes,—himself a liveryman of the Tylers and Bricklayers' Company,—chairman of the Kent Brick and Tile Company. The works cover an area of twenty-three acres, with the option of the company having fifty acres more. The clay is of a rich character for the purposes for which it is required, and is found to be as equal in quality at a boring of 60 ft. as that near the surface. The machinery is driven by a steam-engine of thirty-five nominal horse-power, having a 3-ft. stroke, and a fly-wheel 14 ft. in diameter. The first point inspected was that part of the field from which the clay is now being dug. It measures about one acre and a half, and is already nearly 40 ft. deep, although the company had not been in working more than about four years. In the machine-house were two machines, one of Murray's, for making bricks of a plastic character, and three others, Bradley & Craven's, which make bricks on what is known as the semi-dry process. The plastic clay is found more on the surface, while that for the semi-dry brick is obtained from a lower layer. In making the plastic brick the clay is passed through a crushing-machine and a mixing-pan into a pug-mill, and there it is pressed and sent out a continuous stream of clay on to the delivering-table, where by a simple process the bricks are cut by wires, their shape being mathematically accurate and without the slightest tear or raggedness. The material for the semi-dry bricks was placed in a hopper which feeds a grinding-mill with a revolving-pan and perforated bottom. When sufficiently ground the clay passes through a receiver, and then into a pressing-machine, and finally into a second mould-box, where the shape of the brick is completed. The machine for the plastic bricks is capable of turning out 25,000 per day, while the others produce about 150,000 a week. The principal kiln in use is built in

accordance with the invention of Mr. Hoffman, of Berlin. It is elliptical in shape, having outside doors to each of the fourteen chambers, through which the bricks are wheeled in and out. The fuel, finely-sifted coal, is let in through apertures in the crown of the arch, and is kept covered up with close-fitting iron caps. The bricks are so packed that the fuel passes freely among them. By means of dampers, the men are able to keep a certain number of bricks always burning, a new stack being begun in front while those cooled are removed from behind. The great feature of the works is the production of blue bricks, the like of which is not to be found manufactured nearer to London than Warwickshire.

The Rev. Mr. Selwyn is about to build a new church for the accommodation of the colony, for which Sir Edward Dering has given the land, and the brick company will supply the materials at cost price.

## DURHAM CITY.

NEW buildings are about to be erected at No. 3, Sadler-street, from designs by Mr. H. T. Gradon, architect, for Mr. John Shields. The buildings are intended for a draper and silk mercer's premises, and consist of a shop on the ground-floor, 80 ft. long, by an average width of 20 ft.; underneath this shop is to be a large furnishing room, 48 ft. by 17 ft., with access by staircase from shop above; and over the shop, approached by another staircase from same, is to be a large showroom, 37 ft. by 20 ft., and two fitting-on rooms for the dressmaking and mantlemaking departments; the two floors above are to be occupied by rooms connected with the same department, and warerooms, &c. The chief rooms are to be heated with a hot-water apparatus, for which provision is made in the cellars. The front to Sadler-street is designed in the Queen Anne style. Sadler-street, though one of the main streets in the city, is only 21 ft. wide; and the Corporation, in spite of their long-talked-of street improvement schemes, rather than avail themselves of such an opportunity of widening the thoroughfare, are not prepared to give any compensation for setting the new premises back, and consequently they will be built to the old street line.

The contract has been let to Messrs. Geo. Gradon & Son for the sum of 2,285*l*. The taking down of the present premises is now in progress.

## VALUE OF FREEHOLD PROPERTY IN FLEET-STREET AND HATTON GARDEN.

ON Tuesday, Messrs. Debenham, Tewson, Farmer, & Co., offered for sale at the Auction Mart several freehold houses, shops, and business premises in Fleet-street and Hatton-garden, principally let on old leases, with early reversions. No. 186, Fleet-street, adjoining St. Dunstan's Church, and near the new Law Courts let on lease expiring at Midsummer, 1882, at a rent of 130*l*. per annum, but estimated to be worth 300*l*. per annum, was sold for 5,850*l*. No. 84, Hatton-garden, occupying an area of 2,230 superficial feet, and let on lease expiring in 1882, at the low rent of 65*l*. per annum, but estimated to be of the rental value of 200*l*. per annum, was sold for 4,700*l*. Four houses in Cross-street, Hatton-garden, let on leases expiring in 1890, at rents now amounting to 223*l*. 11s. 4d., but of the estimated annual value of 275*l*., were sold for an aggregate sum of 5,780*l*., the total proceeds of the entire sale being 15,730*l*.

## FREEHOLD LAND, WALHAM-GREEN.

ANOTHER breaking up of small estates into smaller ones took place under the hammer of Mr. Richard Collier, at the King's Head, Walham-green, on Thursday in last week. The land, which formed part of the whilom residence of the late Mr. Albert Smith, turns out of the North End High-road, and is about three minutes' walk from the Walham-green Station of the Metropolitan District Railway.

A 40-ft. road, which will be for the present at least a *cul-de-sac*, 454 ft. long, is in course of formation through the property. The frontages are 17 ft., with but two exceptions, varying in depth from 38 ft. to 64 ft., and taking an average, the price given for a plot, 17 ft. by 49 ft., was 120*l*. The total amount realised was 6,770*l*., equal to about 4,700*l*. to the acre, including the land occupied by roads, &c. The road and sewer are included in the purchase, and a free conveyance is given to all those buyers who are satisfied to accept the title without inquiry. The value of the houses to be built is stipulated to be not less than 350*l*. each.

## THE HANOVER GALLERY IN THE AUCTION MART.

THE leasehold corner premises 47, New Bond-street, and 60, Maddox-street, comprising two modern shops, four upper floors, and basement, including several sets of residential chambers, and also the Hanover Gallery, were offered for sale at the Auction Mart on Tuesday, by Messrs. Debenham, Tewson, & Co. The supposed gross rental value of the property was stated to be 2,220*l*. per annum, the net profit rental being 1,394*l*. 15s. per annum, after payment of the ground-rent of 545*l*., rates and taxes 200*l*., and housekeeper for chambers 80*l*. The Hanover Gallery is 92 ft. long by 26 ft. wide. It was announced that the gallery is held under a lease, which would expire in 1889, but that there is an agreement to surrender this lease, and to accept a new lease for forty and three quarter years from Christmas, 1879, at a ground-rent of 300*l*. per annum. It was further stated that there was an offer to take a lease of this portion of the property for seven, fourteen, or twenty-one years, at a rental of 1,225 per annum*l*. The highest offer made for the property was 13,500*l*., on which the auctioneers announced that 20,000*l*. was the reserve, and at that sum the property was withdrawn.

## ALLEGED MISREPRESENTATION AS TO DRAINAGE.

KINNAIRD *v.* SMITH.

THE plaintiff in this case (which came before Mr. Justice Kay, sitting in the Chancery Division of the High Court of Justice), who was an artist, had agreed to take a lease of a house at Holloway, from the defendant, Thomas Smith.

At the time of entering into the agreement he made inquiries of the defendant as to the drainage of the house, and the defendant assured him that the drains were in excellent order, and that the drainage of his house was a thing he prided himself upon. After the plaintiff had taken possession he found that very offensive smells arose from the basement, and he discovered that these smells were caused by a defect in the drains. While he resided there his wife was taken ill, and when a medical man was called in he said the illness arose from blood poisoning, caused by sewer gas, and advised him to leave the house. The plaintiff himself had suffered illness from the same cause. The action was brought to rescind the contract and for damages caused by the plaintiff's removal of his furniture and the expenses he had been put to.

The case was several days before the Court, and many witnesses gave evidence as to the condition of the drains.

His lordship was of opinion there was undoubted evidence that the defendant had assured the plaintiff that the drains of the house were in perfectly good condition. The only question upon that branch of the case was whether the defendant knew at the time he made the statement that the representation was not correct; but, in his lordship's opinion, it was his duty to know. He was the builder of the house, and he had superintended the erection of the house and the construction of the drains, and he was answerable for the assurance he had given to the plaintiff that the drains were in good order before he let the house to the plaintiff. Then, as to the question what was really the state of the drains, a great number of witnesses had been examined on each side, and the evidence was in some parts very contradictory; but the evidence on behalf of the plaintiff received strong corroboration from the statement of the medical gentleman who was called in to attend Mrs. Kinnaird and also Mr. Kinnaird. That witness said that both of them were suffering from blood-poisoning, caused by an escape of sewer-gas, and he described what he saw in the basement of the house as being quite sufficient to account for the illness, and so bad did he consider it that he advised the plaintiff to quit the house immediately. This was the evidence of an uninterested person, and it was sufficient in his mind to confirm the plaintiff's witnesses, and a decree must be made for a rescission of the contract and for damages to be paid to the plaintiff, the amount of which must be fixed by the chief clerk if the parties could not agree upon the amount.

## WESTMINSTER ABBEY.

SIR,—I should not have troubled you with this communication, but I hoped there was in England some public artistic body who would have suggested placing a monument to the late Earl of Beaconsfield in the scene of his labours, viz., the Houses of Parliament, and thus saving the present overcrowded Abbey from being further disfigured by having more glaring white marble effigies crowded within its walls. Not that I should think any one, either Conservative or Liberal, would wish to deprive the late Earl of Beaconsfield of a statue in Westminster Abbey, but that one in the Houses of Parliament would not only be more appropriate, but would prevent the further disfiguring of our grand Abbey, the care of which, I am afraid, rests too much with ecclesiastics. Nothing will be done artistically by a nation which hands over its greatest architectural monuments (as in the case of St. Alban's Abbey) to a too confident amateur to play with.

MUSIC.

## THE NEW NATURAL HISTORY MUSEUM.

SIR,—The letter which appeared in your issue of the 7th inst., under this head, scarcely seems worth an answer. My point was simply whether the style of architecture, and the material selected, are the best that might have been chosen for the purposes of a Natural History Museum. It is a new idea that people visiting our national collections, or any other collections, go for an architectural treat. In the case of the National Gallery, for instance, the grandest architecture and most superb colouring would be out of place if they detracted from the pictures. A building worthy the nation and the age was of course required, and must, under almost any circumstances, have been secured at the outlay, and on such a site, but the building should have been designed, at least in its interior, to set off to the very best advantage, and thus to enhance the value and interest of, the nation's collection of natural history.

I presume that no person can consider that walls of mottled fawn and dun-colour, with moulded natural history objects in high relief, are the best surroundings for a collection of skeletons and bones of generally the same tones of colour as the walls. Nor is it to be expected that the fawn and dun-colour skins of the mammalia will stand out effectively when they are placed in position. The only natural history series that can possibly show to advantage are the birds, especially those of dark greenish or bluish plumage. I should like to see the walls tinted to whatever colours are required to render the collections most distinct and impressive, but architectural sentiment will doubtless prevent this being carried out. Having expressed my opinion, which is shared in by several men of science, artists, and even architects, with whom I have conversed, and been honoured by its publication in the *Builder*, I do not intend to be drawn into any further discussion, even by letters with inverted commas, Sirs, and a generally discourteous tone.

A NATURALIST.

## ST. DOMINIC'S PRIORY CHURCH.

SIR,—As a contributor, and (*pace* Mr. "Sacristan") an intending contributor to St. Dominic's Priory Church, Haverstock Hill, I think I have some right to ask, Who is the anonymous libeller of our architect, Mr. Buckler, and his work? Whilst confined to the *Sacristy*, no one, o course, is any the wiser; but when his vapourings are admitted into the *Builder*, they become matters of possible importance.

Has this person, assisted by his experienced builder, really trespassed into our church, and there taken his surreptitious, and consequently hasty and unreliable, measurements; or have his wanderings been only under the influence, by which he recommends his readers to follow his steps, of moonshine? Is he, as one may judge from his mouthing of St. Joseph and St. Dominic, some half-fledged convert, trying to run alone before he has cast his swaddling clothes, trading, perhaps, on the inheritance of a sometime eminent name; or is he one who, halting between two opinions, has never caught the Catholic spirit of Leo XIII., nor lost the malignant one of John Calvin? Trot him out, Mr. Editor, if you please, and let us know who he really is, before Mr. Buckler condescends, "as a gentleman," to notice this nameless scribbler, and reply to some letter, confessedly anonymous again, said to have been addressed to him by the same writer.

W. H. LOVELL.

68, Park-road, Haverstock Hill.

P.S.—I am not concerned to take up the cudgels for our Father Prior; but he, as a man of education, knows when he writes of "alleged facts," rather than of "facts alleged" (which no one better than your correspondent knows to be no *facts* at all). Before giving lessons in English grammar, let Mr. "Sacristan" get instructed himself in lessons of so-call'ed English truthfulness, fair play, and courage.

SIR,—Allow me to state that my survey was made officially, under an ordinary requisition from the Metropolitan Board of Works, resulting from an information given to the chief surveyor of the Vestry of St. Pancras, and by him duly communicated to me.

The source of the information I do not know.

FREDERICK WALLEN,
District Surveyor for West St. Pancras.

## SANITARY APPLIANCES.

SIR,—Your correspondent, Mr. Boyd, in a communication (page 554) invites discussion by referring to several points on which great difference of opinion exists.

1. There is to be a fresh-air chamber in the "sub-basement" in which the air is to be "filtered" and "washed."

I venture to submit that the nearer the ground the greater the impurity of the air; also that there is always an access of carbonic acid in the air of confined spaces such as streets; therefore all supplies of fresh air should be drawn from high towers, or, at least, from the highest point of buildings, in order to avoid the cloud of impurities hanging over London, Mr. Galton, F.R.S., states that at a height of 200 ft. the air is comparatively pure, and at 600 ft. quite so. Filtration and washing (if air can be washed?) will undoubtedly remove all particles held in mechanical suspension. But how can these processes get rid of the sulphurous acid, ammonia, and other impurities? And how

is it proposed to introduce the necessary quantity of ozone?

"7. Facility for the personal examination of "every foot of house-drain" usually buried beneath the basement floor."

If any house-drain is properly laid and constructed at the first, it is self-cleansing, and therefore it is unnecessary to expose to view every foot of the length; one manhole at each end, and also at double junctions, ought to be sufficient to keep any system of house sewerage clean and satisfactory.

Although it is advisable always to provide means of extracting the vitiated air near the ceiling, yet it is, I believe, impossible to lay down rules to be applied alike in every case. The ventilation of any room ought to be just as much a matter of study as the decoration and construction of its walls.

A. HARLAND.

## Books.

"THE Churches of the Nene Valley, Northamptonshire," by Edmund Sharpe, M.A., and J. Johnson and A. H. Kersey (Batsford), has been published, and will receive from us in due course the attention it well deserves.——"Academy Notes, 1881," and "Grosvenor Notes, 1881," both edited by Mr. Henry Blackburn, and published by Chatto & Windus, Piccadilly, are now before us, and will doubtless receive the same wide welcome as heretofore. The illustrations, although, as the editor says, not intended as works of art, show a considerable improvement even in that direction over the earlier issues.——"The Illustrated Catalogue of the Paris Salon, 1881," edited by F. G. Dumas, is also published in London (Hamilton, Adams, & Co.), and is cheap at 4s.

## Miscellanea.

**Colour Blindness.**—The fifth course of Cantor Lectures at the Society of Arts will be on "Colour Blindness and its Influence upon Various Industries," by R. Brudenell Carter, F.R.C.S. The first lecture, delivered Monday, May 16, treated of the nature of colour vision generally; solar light, its composition; the prismatic spectrum; invisibility of certain elements of the spectrum to the colour-blind; appearance of the combinations of the remaining elements; varieties and definitions of the resulting colour blindness. The second lecture, May 23, will speak of mistakes of the colour-blind in daily life; their methods of endeavouring to counteract the consequences of their defect; modes of testing for colour blindness; sources of error in testing; the actual prevalence of the affection in this and other countries, and in different classes of the population. The third lecture, May 30, will be on industries chiefly affected by colour-blindness,—engine-drivers, pilots, artists, letter-sorters, drapers, painters, &c.; recent legislation affecting colour blindness in America, and urgent need for it in this country.

**Victoria (Philosophical) Institute.**—A meeting of this society took place on Monday, when a paper on "The Rainfall and Climate of India" was read by Sir Joseph Fayrer, F.R.S. He reviewed the causes and effects of those climatic changes which obtain in that country at the present time, and many of which once operated in Palestine and Egypt, not to mention England and other parts of the world, and threw light on questions involving the denudation theory, the variation of river deposits, and other matters affecting the uniformatarian theory of geology. Sir Joseph Fayrer spoke at some length in regard to the climate of India, and showed that, if what science had taught us in regard to the effects of cultivation, the preservation of the forests, drainage, &c., were carefully attended to by the powers that be, the importance of the results could not be estimated, as they involved the health and prosperity of that great country.

**The Manufacture of Glass for Decorative Purposes.**—A paper under this title by Mr. H. J. Powell, B.A., was read at the Society of Arts on the 11th inst., Col. Donnelly, R.E., in the chair. The subject was divided into three parts:—1. The development for decorative purposes of the natural properties of glass; 2. The production of decorative forms, or decorative material, by the manipulation of glass in a plastic or viscous condition; 3. The treatment of the surface of glass with a view to supplement the effects due to its form or its nature.

**The Anglo-Bilbao Steel Ore Company.** Such of our readers as are seeking investments may as well peruse the prospectus of this company, which appears in our advertisement columns.

**The Tay Bridge.**—A Select Committee of the House of Commons has been sitting during the last few days on the Bill promoted by the North British Railway Company for the construction of a new railway bridge over the Tay, and the preamble of the Bill has been declared to be proved. The proposed structure, which is for a double line of rails, is designed by Mr. Barlow, C.E., and is estimated to cost about 670,000*l.*, as against the 350,000*l.* which was spent on the single-line bridge destroyed in December, 1879. It will be raised on entirely new foundations, and the committee have stipulated that every caisson in the piers shall be properly adjusted to bear at least 33 per cent. above the maximum weight to which it can be subjected. The height has been reduced 11 ft. below that of the old structure, thus giving a waterway for ships passing to Perth and Newburgh of 77 ft., instead of 88 ft.

**Electric Light on the Continent.**—During Holy Week the Colosseum was lighted by the electric light. The effect is said to have been grand in the extreme, the details of this splendid ruin being well defined. —— The Municipal Council of Vienna have adopted the suggestion of their engineer, Herr Franz Haberkorn, that the theatres of that city should be illuminated by means of the electric light.—*The Electrician.*

**Mr. H. Saxon Snell** has written a work, entitled "Charitable and Parochial Establishments," which will shortly be published by Messrs. Batsford, 52, High Holborn, London. The book will be illustrated by numerous lithographic plans and views of public schools, hospitals, workhouse buildings, &c.

**Conversazioni.**—The Council of the Society of British Artists held a *conversazione* at their galleries in Suffolk-street on Thursday evening last.——The Council of the British Archæological Association have arranged to hold a *conversazione* in the same galleries on Wednesday evening, the 22nd of June.

**An Oak Lectern,** handsomely carved, with brass railings, has been recently placed in Worcester Cathedral, in memory of the late Dean. The work is by Messrs. Jones & Willis.

**Ventilation.**—Messrs. Robt. Boyle & Son are at present applying their complete system of ventilation and air-pump ventilators to Knowsley Hall, Lord Derby's seat in Lancashire.

**Builders' Benevolent Institution.**—An election of pensioners will take place on Thursday next, the 26th inst., from 12 to 3 o'clock, at Willis's Rooms, St. James's.

## TENDERS

For erecting house and stables at Woodford, for Mr. J. Skinner. Messrs. Ingram & Holland, architects. Quantities by Mr. Walter Barnett:—

| | | | |
|---|---|---|---|
| North Bros. | £2,090 | 0 | 0 |
| Vigor | 1,985 | 0 | 0 |
| Wood Bros. | 1,980 | 0 | 0 |
| Spencer & Co. | 1,883 | 0 | 0 |
| Palmer & Son | 1,850 | 0 | 0 |
| Kerry | 1,700 | 0 | 0 |
| Body | 1,684 | 0 | 0 |

For work on the Kenyon House Estate, Bedford-road, Clapham:—

*Sewers, Gulleys, and Roads.*

| | | | |
|---|---|---|---|
| W. Stubbs | £1,515 | 0 | 0 |
| J. Neal | 1,430 | 0 | 0 |
| W. Harris | 1,395 | 0 | 0 |
| R. Mayo | 1,190 | 0 | 0 |
| J. Mears | 1,030 | 0 | 0 |

*Drains from Sewers to Forecourts of 152 Houses.*

| | | | |
|---|---|---|---|
| W. Stubbs | £266 | 0 | 0 |
| J. Neal | 245 | 0 | 0 |
| W. Harris | 228 | 0 | 0 |
| R. Mayo | 190 | 0 | 0 |
| J. Mears | 171 | 0 | 0 |

For rebuilding No. 66, Great Titchfield-street, Marylebone, for Mr. W. S. Chapman. Messrs. Wm. Hudson, Son, & Booth, architects. Quantities by Mr. J. W. Forge:—

| | | | |
|---|---|---|---|
| Braid & Co. | £1,918 | 0 | 0 |
| Hall, Beddall, & Co. | 1,542 | 0 | 0 |
| J. Morter | 1,457 | 0 | 0 |
| W. Brass | 1,397 | 0 | 0 |
| Russell | 1,351 | 11 | 0 |
| Spencer & Co. | 1,346 | 0 | 0 |
| T. Nixon | 1,345 | 0 | 0 |
| J. & J. Greenwood | 1,196 | 0 | 0 |
| Wilson & Elton | 1,129 | 0 | 0 |

For Memorial Institute at Slinfold, Sussex, for Mr. Charles Child. Mr. E. L. Tarbuck, architect:—

| | | | |
|---|---|---|---|
| Newstead | £388 | 0 | 0 |
| King | 344 | 16 | 0 |
| Grinstead (accepted) | 314 | 0 | 0 |

For alterations and additions to 200, Euston-road, for the London Female Preventive and Reformatory Institution. Mr. W. P. Griffith, architect:—

| | | | |
|---|---|---|---|
| Lidstone | £1,180 | 0 | 0 |
| Pocock | 938 | 0 | 0 |
| Brown | 883 | 0 | 0 |
| Nixon | 828 | 0 | 0 |
| Dunford & Langham | 789 | 0 | 0 |

For the erection of Vicarage House and stabling at Criftins-by-Ellesmere, Salop. Mr. A. Lloyd Oswell, Shrewsbury, architect:—

| | | | |
|---|---|---|---|
| J. Bayley, Oswestry | £2,041 | 0 | 0 |
| Thos. Speake, Whitchurch | 1,850 | 0 | 0 |
| W. Birrell, Shrewsbury | 1,795 | 0 | 0 |
| W. Howell, Ellesmere | 1,780 | 0 | 0 |
| J. Griffiths, St. Martin's | 1,765 | 0 | 0 |
| Bowdler & Co.,* Shrewsbury | 1,700 | 0 | 0 |
| G. Kesterton, Ellesmere | 1,640 | 0 | 0 |

* Accepted.

For new aisle and part restoration of church at Llandinabo, Ross, Herefordshire. Mr. A. Lloyd Oswell, Shrewsbury, architect:—

| | | | |
|---|---|---|---|
| J. Court, Llanwarne (accepted) | £601 | 0 | 0 |

For alterations to the Weymouth Arms, Weymouth-terrace, Hackney-road, for Messrs. Watney & Co. Mr. C. W. Bovis, architect. Quantities by Mr. J. M. Hawkins:—

| | | | |
|---|---|---|---|
| Taylor | £1,397 | 0 | 0 |
| Axford | 1,375 | 0 | 0 |
| Patman & Fotheringham | 1,293 | 0 | 0 |
| Hanley | 1,140 | 0 | 0 |
| Grant | 1,087 | 0 | 0 |
| Lamble | 1,067 | 0 | 0 |
| Spencer & Co. | 975 | 0 | 0 |

For the erection of a block of school buildings and appurtenances, at Regent's-lane, Custom House, in the parish of West Ham, Essex, for the West Ham School Board. Mr. J. T. Newman, architect. Quantities supplied by Messrs. R. L. Curtis & Sons:—

| | | | |
|---|---|---|---|
| T. Boyce | £6,490 | 0 | 0 |
| B. E. Nightingale | 6,438 | 0 | 0 |
| R. Abraham | 6,195 | 0 | 0 |
| Wood Bros. | 6,183 | 0 | 0 |
| Wall Bros. | 6,120 | 0 | 0 |
| Hearle & Son | 5,993 | 0 | 0 |
| North Bros. | 5,985 | 0 | 0 |
| A. Reed | 5,959 | 0 | 0 |
| J. Morter (accepted) | 5,893 | 0 | 0 |

For water-tower, boiler-house, chimney-shaft, &c., for the Guardians of the Hamlet of Mile-end Old Town. Mr. W. Knight, architect:—

| | | | |
|---|---|---|---|
| Shurmur | £3,645 | 0 | 0 |
| Croaker | 3,395 | 0 | 0 |
| Hearle & Son | 3,393 | 0 | 0 |
| W. Wood | 3,320 | 0 | 0 |
| Perry & Co. | 3,243 | 0 | 0 |
| Gentry | 3,190 | 0 | 0 |

For the construction of new sewers in Russell-square, Upper Montague-street, Woburn-street, Dyott-street, and Bernard-street, for the Board of Works for the Saint Giles's District:—

| | | | |
|---|---|---|---|
| A. Walker | £1,720 | 0 | 0 |
| J. G. B. Marshall | 1,668 | 0 | 0 |
| W. Crockett | 1,286 | 0 | 0 |
| J. Hoare & Son | 1,254 | 0 | 0 |
| T. Pizzey | 975 | 0 | 0 |
| F. W. Keeble | 972 | 0 | 0 |
| Nowell & Robson | 970 | 0 | 0 |
| John Neave & Son | 965 | 0 | 0 |
| Mowlem & Co. | 959 | 0 | 0 |
| A. & F. Culverhouse | 945 | 0 | 0 |
| C. Killingback (accepted) | 895 | 0 | 0 |

For alterations to the Fox, Kingsland-road. Mr. Cotton, architect:—

| | | | |
|---|---|---|---|
| Foxley | £5,454 | 0 | 0 |
| Cocks | 5,298 | 0 | 0 |
| Patrick | 5,050 | 0 | 0 |
| Anley | 4,878 | 0 | 0 |
| Conder | 4,806 | 0 | 0 |
| Shurmur | 4,797 | 0 | 0 |
| Ashby Bros. | 4,771 | 0 | 0 |
| Williams | 4,589 | 0 | 0 |
| Toms | 4,443 | 0 | 0 |

For new Board schools, two residences, boundary-walls, and offices, at Preston-next-Faversham:—

| | | | |
|---|---|---|---|
| A. Kilby, London | £5,573 | 0 | 0 |
| H. W. Wilson, Canterbury | 5,399 | 0 | 0 |
| Perry & Co., London | 5,125 | 0 | 0 |
| P. Stiff, Dover | 4,987 | 0 | 0 |
| D. & C. Jones, Gloucester | 4,945 | 0 | 0 |
| Paramor & Son, Margate | 4,860 | 0 | 0 |
| T. Ware & Son, Faversham | 4,812 | 13 | 6 |
| Calland & Son, Rochester | 4,775 | 0 | 0 |
| T. Cornelius, Whitstable | 4,599 | 0 | 0 |
| T. Burgham, Headcorn | 4,567 | 0 | 0 |
| L. Shrubsole, Faversham | 4,549 | 0 | 0 |
| A. Matthews, Dover | 4,516 | 0 | 0 |
| C. Foad, Whitstable | 4,498 | 0 | 0 |
| W. Judges, Broughton | 4,462 | 10 | 0 |
| Naylor & Son, Rochester | 4,353 | 0 | 0 |
| T. Seager, Borden | 4,250 | 0 | 0 |
| Messrs. Whitney,* Ospringe | 4,100 | 0 | 0 |
| Featherstone & Lucas, Littlebourne | 4,060 | 10 | 0 |

* Accepted.

For rebuilding premises No. 8, Bell-yard, Fleet-street, for Messrs. Maxwell & Son. Messrs. Isaacs & Florence, architects. Quantities supplied by Mr. L. C. Riddett:—

| | | | |
|---|---|---|---|
| Kirk & Randall | £2,079 | 0 | 0 |
| Smith & Co. | 2,010 | 0 | 0 |
| Patman & Fotheringham | 1,985 | 0 | 0 |
| Boyce | 1,939 | 0 | 0 |
| Conder | 1,888 | 0 | 0 |
| Stimpson & Co. | 1,849 | 0 | 0 |
| Scrivener & Co. (accepted) | 1,687 | 0 | 0 |

For repairs, painting, and decorations at 133, King Henry-road, Chalk Farm, for Mr. O. H. Davis. Messrs. H. & J. D. Mathews, architects.

Spencer & Co. (accepted.

For decorations to the Table d'Hôte Room at the Gaiety Restaurant, for Messrs. Spiers & Pond. Mr. Kemp, surveyor.

Spencer & Co. (accepted).

For the erection of dwelling-houses in Kentish-town, for Mr. J. M. Birch. A. J. Bolton, architect:—

| | |
|---|---|
| Gould & Brand | £9,575 0 0 |
| Goodman | 8,800 0 0 |
| Heath | 8,800 0 0 |
| MacFarlane | 8,780 0 0 |
| Beale | 8,772 0 0 |
| Holloway | 8,432 0 0 |
| White | 8,359 0 0 |
| Richens & Mount | 8,048 0 0 |
| Ward & Lamble | 7,979 0 0 |
| Henry & Wallace | 7,800 0 0 |
| Drake | 6,120 0 0 |

For the new Sunday-school and lecture-hall, at the Congregational Church, East-hill, Wandsworth. Mr. E. W. Mountford, architect. Quantities by Mr. E. Crutchloe:—

| | |
|---|---|
| Ronald | £2,239 0 0 |
| Adamson & Sons | 2,098 0 0 |
| Dove Bros. | 2,075 0 0 |
| Gregory | 2,073 0 0 |
| Robinson | 2,012 0 0 |
| Belham & Co. (accepted) | 1,995 0 0 |

For the erection of an infirmary, water-tower, workshops, and various alterations and additions to Mitcham Schools, for the Guardians of the Holborn Union:—

| | |
|---|---|
| Hook & Oldrey | £12,605 0 0 |
| Mowlem & Co. | 12,600 0 0 |
| E. Toms | 12,381 0 0 |
| Manley | 12,235 0 0 |
| Crockett | 11,973 0 0 |
| Wall Bros. (accepted) | 11,825 0 0 |

For proposed erection of the first portion of the north wing, containing 39,945 cubic feet, of the Metropolitan Beer and Wine Merchants' Asylum, Nunhead-green. Mr. W. F. Potter, architect. Quantities prepared by Mr. C. R. Griffiths:—

| | |
|---|---|
| C. Dearing & Son, Islington | £1,266 0 0 |
| A. Nicholls, Leytonstone | 1,134 0 0 |
| W. H. Pritchard, Tooley-street | 1,092 0 0 |
| S. Hayworth, Kingsland | 1,045 0 0 |
| Cass & Beldan, Peckham | 995 0 0 |
| F. Dawes, Peckham | 950 0 0 |
| F. Hersee, Peckham | 928 0 0 |
| Jesse Green, Peckham | 895 0 0 |
| Heather & Laws, Peckham | 865 0 0 |

For the construction of the Brentford and Isleworth Tramway, Brentford, with extensions to Hounslow and Twickenham (seven miles in length). Mr. W. Forbes Ashdown, engineer:—

Messrs. Schofield & Co. (accepted) £42,810 0 0

For detached house and stables at Brondesbury, for Mr. W. Grove. Messrs Hill & Grellier, architects. Quantities by Mr. Francis T. W. Miller:—

| | |
|---|---|
| Merritt & Ashby | £5,033 0 0 |
| John Marsland | 4,898 0 0 |
| Longmire & Burge | 4,849 0 0 |
| T. Little | 4,703 0 0 |
| Simpson & Son (accepted) | 4,615 0 0 |

For alterations and additions to residence, Highbury New Park. Mr. L. Solomon, architect. No quantities:—

| | |
|---|---|
| Downs | £1,080 0 0 |
| Canning & Mullins | 1,063 0 0 |
| A. G. Bolding | 912 0 0 |
| Roberts | 885 0 0 |

For the erection of villa-residence at Crouch-hill, for Mr. Lockyer. Mr. Walter Stair, architect:—

Gladwell (accepted) £1,100 0 0

For the erection of a villa-residence, &c., for Mr. Jno. Vessey. Mr. J. P. Earle, architect, Sheffield. Quantities by the architect:—

| | |
|---|---|
| Hardwick & Burton | £1,001 0 0 |
| G. Hollingsworth (accepted) | 933 10 0 |
| J. Rathbone | 915 0 0 |

For new shop-front and alterations at No. 29, Penton-street, Pentonville, N., for Mr. Joseph Reed. Mr. T. H. Watson, architect:—

| | |
|---|---|
| Banford | £180 0 0 |
| J. Beale | 157 10 0 |
| Royal (accepted) | 146 10 0 |

For alterations and additions at the King of Prussia, Charlotte-street, Blackfriars-road. Mr. George Treacher, architect. No quantities:—

| | |
|---|---|
| J. Beale | £811 0 0 |
| Gill | 780 0 0 |
| Beeton | 768 0 0 |
| Simpson (accepted) | 740 0 0 |

For painting, &c., at Licensed Victuallers' Schools, Kennington-lane. Mr. H. J. Newton, architect:—

| | |
|---|---|
| Shurmur | £535 0 0 |
| Godden | 495 0 0 |
| Keade | 429 0 0 |
| Lamble | 415 0 0 |
| Cade | 400 0 0 |
| Pickersgill | 371 0 0 |
| Walker | 337 0 0 |
| Crabtree | 240 0 0 |
| Cook | 236 0 0 |
| Young & Co. | 228 8 0 |
| Vears & Co. (accepted) | 219 0 0 |

For alterations and repairs to house and studio, No. 294, Camden-road. Mr. C. E. Evans, architect:—

R. Perkins (accepted)

For additions to Charlecote, Hampstead Hill Gardens, Hampstead, for Mr. C. Green. Messrs. Batterbury & Huxley, architects:—

James Holliday, jun., Brixton (accepted).

For house, Hampstead Hill Gardens, Hampstead, for Mr. C. Gurden. Messrs. Batterbury & Huxley, architects:—

B. R. Nightingale, Lambeth (accepted).

For the erection of two villa residences, Forest-gate, for Mr. J. M. Goldie. Messrs. A. & C. Harston, architects. Quantities supplied:—

| | |
|---|---|
| Crockett | £2,400 0 0 |
| Harris & Wardrop | 2,346 0 0 |
| Killby | 2,323 0 0 |
| Johnson, J. H. | 2,275 0 0 |
| Hearle | 2,153 0 0 |
| Nicholls | 2,100 0 0 |
| Shurmur, Lower Clapton (accepted) | 2,070 0 0 |

For the erection of two Infirmaries in connexion with the Asylum for Imbeciles, Darenth, Kent, for the Managers of the Metropolitan Asylum District. Messrs. A. & C. Harston, architects. Quantities supplied:—

| | |
|---|---|
| Wall Bros., London | £16,680 0 0 |
| Jones & Co., Gloster | 16,370 0 0 |
| Crockett, London | 16,326 0 0 |
| Howell & Son, Bristol | 14,995 0 0 |
| Longley, Worth | 14,970 0 0 |
| Sawyer, Clapham | 14,853 0 0 |
| Braid & Co., Chelsea (accepted) | 14,242 0 0 |

For roads and drains on the Eversfield Estate, at Silverhill, St. Leonard's-on-Sea. Messrs. Fowler & Hill, surveyors:—

| | |
|---|---|
| Dibley, Hastings | £900 0 0 |
| Hare, St. Leonards | 819 0 0 |
| Cruttenden, St. Leonards | 798 0 0 |
| Stubberfield & Verrell, Hollington | 705 0 0 |
| Jenkins, St. Leonards | 695 0 0 |
| Beadle, Bros., Erith | 695 0 0 |
| King, Hollington | 550 0 0 |

For building a chancel, altering and re-seating the church of St. Petrock, Exeter. Messrs. Hayward & Son, architects. Quantities supplied:—

| | |
|---|---|
| Stephens & Bastow | £1,799 0 0 |
| Moass & Sons | 1,724 0 0 |
| J. Gibbard | 1,681 0 0 |
| W. Gibson | 1,600 0 0 |
| Stephens & Son | 1,550 0 0 |
| Vickary | 1,530 0 0 |
| Scadding | 1,484 0 0 |
| Luscombe & Son | 1,370 0 0 |
| J. Brealey | 1,348 0 0 |
| W. R. Comming (accepted) | 1,250 0 0 |

For rebuilding Nos. 4 and 4A, Kennington-road, and alterations to the Hercules Tavern adjoining. Messrs. C. J. & C. H. Shoppee, architects:—

| | |
|---|---|
| Braid & Co. | £2,775 0 0 |
| Farrant & Son | 2,625 0 0 |
| Gill | 2,578 0 0 |
| Langmead & Way | 2,497 0 0 |
| Burman (accepted) | 2,399 0 0 |

For granite curbing, at per foot lineal, at Wanstead, Essex, for the Local Board:—

| | Edge. | Circular. | Flat. |
|---|---|---|---|
| | s. d. | s. d. | s. d. |
| G. G. Rutty, Bromley-by-Bow (accepted) | 1 7½ | 1 9 | 1 9 |
| D. Knight, Wanstead Park | 1 7½ | 1 9½ | 1 9½ |
| J. G. B. Marshall, Brighton | — | 2 6 | 2 0 |
| J. Mowlem & Co., Millbank | 1 9 | 2 0 | 1 11 |
| Wheeler & Hindle, Southwark | 1 8½ | 1 10½ | 1 10½ |

R. G. How, Carshalton, 2s. 4d. per foot lineal.
L. Knight, Mile End, for the whole, £199 10s.

For taking off zinc flat and laying new lead at the Pakenham public-house, for Messrs. Watney & Co. Mr. C. W. Bovis, architect:—

| | |
|---|---|
| Pinnegar | £189 0 0 |
| Grant (accepted) | 182 0 0 |

For painting and distempering works at the Poplar and Stepney Sick Asylum, Devons-road, Bromley, for the Managers. Messrs. A. & C. Harston, architects:—

| | |
|---|---|
| Coulson | £997 0 0 |
| Crisp & Tomlin | 938 0 0 |
| Wythe | 870 0 0 |
| Derby, A. W., Limehouse (accepted) | 845 0 0 |

For additional Tramp Wards to Isleworth Workhouse. Mr. Monson, architect:—

| | |
|---|---|
| G. Goddard | £687 10 0 |
| G. Lightfoot | 388 0 0 |
| H. Harryman | 320 0 0 |
| Charlwood Bros. | 295 0 0 |
| W. Gardner | 295 0 0 |
| C. Maton | 274 0 0 |
| T. Beachin | 259 0 0 |
| C. J. Bartlett | 247 0 0 |
| T. Brunsden | 210 0 0 |

For addition to factory at Rushden, Higham Ferrers, for Mr. Paul Cave. Mr. Abraham Hart, architect. Quantities supplied:—

Ireson (accepted) £162 0 0

For two shops and houses at Brixton Hill, for Mr. W. B. Swire. Mr. J. Farrer, architect:—

| | |
|---|---|
| W. Smith | £1,997 0 0 |
| Yardley & Sons | 1,980 0 0 |
| B. T. Wood | 1,959 0 0 |
| R. Conder | 1,950 0 0 |
| J. Smith & Sons | 1,947 0 0 |
| T. E. Julian | 1,945 0 0 |
| J. Harper | 1,904 0 0 |

For furniture for New Limehouse Town Hall. Mr. A. & C. Harston, architects:—

Jenkins, Stepney (accepted) £503 14 3

For painting the outsides of thirty-one houses at Lee, Kent, for Mr. W. Todd. Mr. Witts, architect:—

| | |
|---|---|
| Angood | £483 0 0 |
| Stimpson & Co. | 440 0 0 |

For rebuilding Farm-house Buildings, Guyhirne, Cambridge. Mr. J. Hatchard Smith, architect:—

Cousens (accepted) £152 0 0

For new cottage hospital, Luton, Beds. Messrs. J. R. Brown & Humphreys, architects. Quantities supplied:—

| | |
|---|---|
| Winter | £2,889 0 0 |
| Beale | 2,451 0 0 |
| Wallis | 2,400 0 0 |
| Dunham | 2,370 0 0 |
| Jones | 2,350 0 0 |
| Rayment | 2,297 0 0 |
| Wilmott | 2,249 0 0 |
| Higgs | 2,200 0 0 |
| Laughton | 2,200 0 0 |
| Dawes | 2,199 0 0 |
| Robinson | 2,148 0 0 |
| Smart | 2,110 0 0 |
| Green | 2,043 0 0 |
| Ireson (accepted) | 1,846 0 0 |
| Diamond | 1,729 0 0 |

For new corn warehouse, &c., at Stratford. Mr. J. T. Bressey, architect:—

| | Without Basement. |
|---|---|
| Norton & Son | £2,717 ..... £2,300 |
| Jones & Co | 2,582 ..... 2,075 |
| Perry & Co. | 2,537 ..... 2,071 |
| A. Reed | 2,660 ..... 2,210 |
| Bangs & Co. | 2,525 ..... 1,997 |
| J. Harper | 2,497 ..... 1,995 |
| J. Brown* | 2,475 ..... 1,895 |
| J. Holland | 2,442 ..... 1,956 |
| J. Cardus | 2,366 ..... 1,908 |

* Accepted for £1,895, without basement.

For additions to the East Mills, Colchester, for Messrs. E. Marriage & Son. Mr. E. Burgess, architect:—

| | |
|---|---|
| Saunders & Son | £1,060 0 0 |
| W. Dupont | 957 0 0 |
| W. Dobson | 945 0 0 |
| Everett & Son | 897 10 0 |

For new house at Scalby, near Scarborough, for Mr. John Edward Ellis. Mr. E. Burgess, architect. Quantities by Mr. W. Thornicraft:—

| | |
|---|---|
| J. Barry | £8,612 0 0 |
| G. Mansfield | 8,443 0 0 |
| J. H. Thorpe | 8,429 10 0 |
| J. Foster | 8,317 15 0 |
| J. Blands | 8,000 0 0 |
| Petch & Fox | 7,517 2 0 |
| J. Padbury & Son | 7,397 0 0 |

For two villa residences at East End, Finchley, for Mr. Pritchard. Mr. F. Chambers, architect:—

| | |
|---|---|
| Harper | £1,980 0 0 |
| Grover | 1,712 0 0 |
| Haysmen | 1,430 0 0 |
| Eaves | 1,309 2 0 |

For two villa residences in Alexandra-road, Bedford, for Mr. J. Newham and Mr. W. Robinson respectively. Mr. F. T. Mercer, Bedford, architect. Quantities supplied:—

| | |
|---|---|
| Foster, Bedford | £1,190 0 0 |
| Corby & Son, Bedford | 1,093 0 0 |
| Warton, Bedford | 1,085 0 0 |
| Lilley, Bedford (accepted) | 1,035 0 0 |

For houses at Reigate. Mr. Henley, architect:—

| | |
|---|---|
| Barber | £1,360 0 0 |
| E. & W. White | 1,342 0 0 |
| Knowles | 1,297 0 0 |
| Winkworth & Worsell | 1,280 0 0 |
| Clark | 1,257 0 0 |

For alterations and additions to Mayfield, near Dorking.

| | |
|---|---|
| Rowell | £2,000 0 0 |
| Marriage | 1,930 0 0 |
| Winkworth & Worsell | 1,900 0 0 |
| Stennett | 1,851 0 0 |

For excavating, brickwork, slating, carpentry, joinery and masonry of new warehouse in Queen's Head-lane, Bedford, for Mr. E. Carter. Mr. F. T. Mercer, architect. Quantities supplied:—

| | |
|---|---|
| Potter, Bedford | £809 0 0 |
| Lilley, Bedford | 771 12 0 |
| Moore, Bedford | 769 0 0 |
| Corby & Son, Bedford | 764 0 0 |
| Warton | 748 0 0 |
| Harrison | 745 0 0 |
| Laughton | 730 0 0 |

For new story, &c., at 80, Abingdon Villas, Earls Court, Kensington, for Mr. W. Thomas. Mr. C. Sewell, architect:—

| | |
|---|---|
| Nash | £245 0 0 |
| Holland | 225 0 0 |
| Stimpson & Co. | 213 0 0 |
| Turrell | 168 0 0 |

For new Board school at Walnut Tree-walk, Vauxhall, for the London School Board. Mr. E. R. Robson, architect:—

| | |
|---|---|
| Lathey Bros. | £5,389 0 0 |
| Marsland | 4,897 0 0 |
| Nightingale | 4,761 0 0 |
| Higgs & Hill | 4,750 0 0 |
| Jerrard | 4,735 0 0 |
| Stimpson & Co. | 4,595 0 0 |
| C. Wall | 4,500 0 0 |

For inside repairs and decorations at 62, Pembridge Villas, for Mr. J. Schwaitzchild. Messrs. Joseph & Pearson, architects:—

| | |
|---|---|
| Hearn | £579 0 0 |
| McLachlan | 545 0 0 |
| Phillips & Son | 536 0 0 |
| Stimpson & Co. (accepted) | 423 0 0 |

For the erection of new warehouse at Narrow-street, Limehouse, for Messrs. Lynn & Holman. Mr. W. Barber, architect:—

| | |
|---|---|
| Williams & Son | £1,725 0 0 |
| Grover | 1,484 0 0 |
| Stimpson & Co. (accepted) | 1,441 0 0 |

For taking down and rebuilding the City of Salisbury public-house, Freeschool-street, Horselydown, for Messrs. Holt & Co. Mr. Charles Fitzroy Doll, architect. Quantities supplied by Mr. Charles Hemman:—

| | | | |
|---|---|---|---|
| Johnson | £2,493 | 0 | 0 |
| Williams | 2,440 | 0 | 0 |
| Taylor & Parfitt | 2,421 | 0 | 0 |
| Smith & Sons | 2,277 | 0 | 0 |
| Brass | 2,120 | 0 | 0 |
| Croaker & Sons | 2,100 | 0 | 0 |
| J. Beale (accepted) | 2,044 | 0 | 0 |

For alterations and additions at the Golden Lion Hotel, Edmonton, for Mrs. Hanaley. Mr. E. M. Hiscocks, architect. Quantities supplied:—

| | | | |
|---|---|---|---|
| Little | £1,799 | 0 | 0 |
| Green | 1,695 | 0 | 0 |
| Ward | 1,489 | 0 | 0 |
| J. Beale | 1,385 | 0 | 0 |

For alterations and additions to the Peacock Tavern, Cambridge-road, E., for Mr. E. J. Rose. Messrs. Wilson, Son, & Aldwinckle, architects. Quantities supplied:—

| | | | |
|---|---|---|---|
| Hall, Beddall, & Co. | £2,542 | 0 | 0 |
| Merritt & Ashby | 2,520 | 0 | 0 |
| Bangs | 2,389 | 0 | 0 |
| Earl | 2,290 | 0 | 0 |
| Cox | 2,160 | 0 | 0 |
| J. Beale | 2,137 | 16 | 0 |
| Shurmur (accepted) | 2,070 | 0 | 0 |

For repairs to stables, 9, 10, 11, 14, 15, & 17 Claremont Mews, Pentonville, for Messrs. G. & R. Saywell. Mr. W. P. Griffith, architect:—

| | | | |
|---|---|---|---|
| Brown | £264 | 0 | 0 |
| Lidstone | 262 | 0 | 0 |
| Burton | 225 | 0 | 0 |
| Baylis | 181 | 0 | 0 |
| Cornwell (accepted) | 146 | 0 | 0 |

For construction of roads and sewers on the Clapham Park Estate, Cavendish-road, Clapham. Messrs. Tunley & Boyle, surveyors:—

| | | | |
|---|---|---|---|
| Jackson | £499 | 0 | 0 |
| Ford & Co. | 443 | 0 | 0 |
| Harris | 430 | 0 | 0 |
| Lyons | 410 | 0 | 0 |
| Bath & Blackmore (accepted) | 389 | 0 | 0 |

For the construction of roads and sewers on the Seven Sisters Station Estate, in the parish of Tottenham. Messrs. Tunley & Boyle, surveyors:—

| | | | |
|---|---|---|---|
| Bath & Blackmore (accepted) | £825 | 0 | 0 |

For laying in sewers on estate situate in Ferndale-road, Clapham, for Mr. W. Rowe:—

| | | | |
|---|---|---|---|
| Nobbs | £352 | 9 | 0 |
| J. Neal | 247 | 16 | 0 |
| Butler | 246 | 4 | 0 |
| Thompson | 244 | 3 | 0 |
| G. Harris | 239 | 12 | 6 |

For building the Mitre, for Mr. Barnes. Mr. Brooker' architect:—

| | | | |
|---|---|---|---|
| Cole | £1,894 | 0 | 0 |
| Drake | 1,890 | 0 | 0 |
| Shurmur | 1,485 | 0 | 0 |
| Jackson & Todd | 1,445 | 0 | 0 |
| Cullum | 1,433 | 0 | 0 |
| Hubble & Scott | 1,350 | 0 | 0 |

For repairs to the Licensed Victuallers' Asylum, Old Kent-road, Mr. W. F. Potter, architect:—

| | | | |
|---|---|---|---|
| A. Danks, Peckham | £485 | 0 | 0! |
| F. Herring, Peckham | 448 | 0 | 0 |
| Mallett Bros., Horselydown | 413 | 0 | 0 |
| T. Ford, Clapham | 362 | 0 | 0 |
| B. Cook, Farringdon-street | 255 | 0 | 0 |
| R. Sayer, Camberwell | 247 | 5 | 7 |
| G. W. Butler, Holloway | 232 | 0 | 0 |
| C. Dearing & Son, Islington | 220 | 0 | 0 |
| F. Hersee, Peckham | 198 | 15 | 0 |
| S. Hayworth, Kingsland | 178 | 0 | 0 |
| W. Wythe, Dalston | 167 | 0 | 0 |
| W. Wells, Paddington (accepted) | 160 | 0 | 0! |

For alterations and additions to Mr. G. Jackman's residence, Woking. Mr. F. Eggar, architect:—

| | | | |
|---|---|---|---|
| Gale, Woking | £650 | 0 | 0 |
| Whitburn, Woking | 605 | 0 | 0 |
| Garland, Aldershot (accepted) | 557 | 0 | 0 |

For warming and ventilating, by the new Hydro-caloric apparatus, the new Medical Schools at the Charing Cross Hospital. Mr. J. J. Thomson, architect:—

| | | | |
|---|---|---|---|
| J. Weeks & Co., Chelsea | £330 | 0 | 0 |

For four semi-detached residences to be erected at Hampstead. Mr. Henry S. Legg, architect. Quantities by Messrs. Linsdell & Giffard:—

| | The Buildings. | Joiner's Work. |
|---|---|---|
| Ashby Bros. | £12,860 | £4,759 |
| Higgs & Hill | 12,640 | 4,740 |
| Patman & Fotheringham | 12,438 | 4,790 |
| Brass | 12,397 | 4,810 |
| Burford | 12,197 | 4,830 |
| Croaker | 12,347 | 4,630 |
| Macey & Co. | 12,515 | 4,442 |
| Morter | 12,216 | 4,710 |
| Kirk & Randall | 12,193 | 4,717 |
| Manley | 11,885 | 4,580 |
| Perry & Co. | 11,342 | 4,000 |
| Lawrence | 11,486 | 3,895 |
| Sage | — | 5,900 |

For alterations and fitting-up offices, 25 and 26, Lime-street, for Mr. J. Williams. Messrs. G. Elkington & Son, architects. Mr. C. Stanger, surveyor:—

| | | | |
|---|---|---|---|
| Downs | £2,622 | 0 | 0 |
| Lawrence | 2,453 | 0 | 0 |
| Harrison & Wood | 2,384 | 0 | 0 |
| Staines & Son | 2,084 | 0 | 0 |

For alterations to the Crooked Billet public-house, Upper Clapton, for Mr. Fairhead. Mr. J. Jewhurst, architect:—

| | | | |
|---|---|---|---|
| Wittemore & Rogers | £315 | 0 | 0 |
| Moore | 288 | 10 | 0 |
| Spencer & Co. | 287 | 0 | 0 |
| Jackson & Todd | 278 | 0 | 0 |
| Hewlett | 238 | 0 | 0 |

For the erection of Public Baths, Richmond. Messrs. Geo. Elkington & Sons, architects:—

| | | | |
|---|---|---|---|
| Osborne | £5,317 | 0 | 0 |
| Angood | 5,255 | 0 | 0 |
| Sweet & Loader | 5,176 | 0 | 0 |
| Beale | 4,992 | 0 | 0 |
| R. M. Priestley (accepted) | 4,960 | 0 | 0 |

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